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SEMIANNUAL MONITORING REPORT

OPERABLE UNIT NO. 7 - SITES 1 AND 28
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

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SEMIANNUAL MONITORING REPORT

The semiannual monitoring report which follows presents a summary of sampling activities, field observations, analytical results, and significant findings which pertain to the monitoring program at Operable Unit (OU) No. 7 (Sites 1 and 28), Marine Corps Base (MCB) Camp Lejeune, North Carolina. Conclusions and recommendations regarding the monitoring program are also presented within this report.

Monitoring activities at OU No. 7 began in 1995 and have continued on a semiannual basis. The most recent sampling initiative commenced January 19, 1998 and concluded January 22, 1998. Groundwater samples at Site 1 were obtained from seven shallow monitoring wells and one deep monitoring well. Groundwater samples at Site 28 were obtained from four shallow monitoring wells and two deep monitoring wells. A fifth shallow monitoring well at Site 28, 28-GW08, was not accessible at the time of sample collection. In addition to groundwater samples, surface water and sediment samples were obtained from three locations adjacent to Site 28 in the New River. Figure 1 depicts groundwater sampling locations at Site 1. Figure 2 depicts groundwater, surface water, and sediment sampling locations at Site 28. [Note that all tables and figures are provided after the text portion of this report.]

Sampling activities were conducted and subsequent laboratory analyses were performed according to procedures and methods specified in the Long-Term Monitoring Work Plans for OU No. 7 (Baker, 1996). The project work plans identify a select number of monitoring wells at Sites 1 and 28 for which continued periodic sampling is required. Selection of the monitoring wells was based upon previous investigations performed at OU No. 7. Tables 1 and 2 provide construction details of monitoring wells included in the monitoring program. As stipulated in the project work plans, measurements of pH, specific conductance, dissolved oxygen, temperature, and turbidity were recorded prior to sampling. Summaries of groundwater field parameters from Sites 1 and 28 are provided in Tables 3 and 4, respectively.

The monitoring program at Sites 1 and 28 was implemented to assess whether contamination, detected during previous investigations, remains present, has migrated, or has degraded through natural processes. Based upon previous analytical results and decision documents, volatile organic compounds (VOCs) were identified as contaminants of concern at Site 1; metals were identified as a concern at Site 28. Tables 5 and 6 provide a summary of requested laboratory analyses and sample identifications.

Sample information, including well number, sample identification, time and date of sample collection, samplers, analytical parameters, and required laboratory turnaround time was recorded in a field logbook and on sample labels. Chain-of-custody documentation, provided in Attachment A, accompanied the samples to the laboratory.

Groundwater Elevation and Flow Direction

The following provides information concerning groundwater flow patterns at Sites 1 and 28. Groundwater elevations and flow directions are presented separately for each site within the sections that follow.

Site 1

Water level measurements were obtained at Site 1 on January 21, 1998. Table 7 provides a summary of water level measurements. Figure 3 depicts the static elevations and approximate flow direction

of groundwater at Site 1. The groundwater flow regime throughout the northern portion of Site 1 is relatively consistent. As depicted in Figure 3, groundwater flow is generally west toward an unnamed tributary of Codgels Creek. The unnamed tributary discharges into Codgels Creek at Site 28, approximately 1,500 feet southwest of Site 1.

Site 28

Water level measurements at Site 28 were obtained on January 21, 1998. Table 8 provides a summary of water level measurements. Figure 4 depicts the static elevations and approximate flow direction of groundwater within the study area. Groundwater flow within the surficial aquifer at Site 28 is influenced by the New River and Codgels Creek. As depicted in Figure 4, groundwater flow in the central and eastern portions of the site is toward Cogdels Creek. Surficial groundwater in the western portion of Site 28 tends to flow radially toward the New River and Cogdels Creek.

Field Observations

The following field observations were noted during the most recent semiannual monitoring event at Sites 1 and 28. Recommendations regarding the field observations are presented within the latter portion of this report.

Monitoring wells installed at Sites 1 and 28 during the 1984 Confirmation Study exhibit signs of subsurface deterioration. Turbidity readings, obtained during sampling activities, suggest that soil material from the surrounding formation has begun to infiltrate the well screens and sand packs of older monitoring wells. Less than ideal sampling conditions may result when consistent readings of greater than 50 nephlometric turbidity units (NTUs) in groundwater are obtained. In general, it is preferable that groundwater samples be collected after turbidity readings stabilize at less than ten NTUs. Elevated turbidity readings are of particular concern among groundwater samples submitted for metal analyses. Sampling data from Site 28 appear to reflect the presence of suspended and dissolved material upon which naturally-occurring metals have adhered.

The northwestern portion of Site 28 is currently being utilized as a soil staging area while nearby construction activity is completed. Several soil mounds, of height greater than 15 feet and base diameter approximately 50 feet, have been placed in a semi-circular configuration adjacent to monitoring well 28-GW08. Although the soil mounds do not appear to have been placed atop the monitoring well, eroded soil from the mounds has completely buried the bollards and protective casing of 28-GW08. As a result, no groundwater sample was obtained from 28-GW08 during the most recent sampling event.

ANALYTICAL RESULTS AND FINDINGS

The section which follows presents analytical results and findings from sampling performed at Sites 1 and 28 during the first calendar quarter of 1998. A summary of all analytical results compiled during the sampling event is presented in Attachment B and corresponding laboratory data sheets are provided in Attachment C.

Site 1

A trip blank was prepared prior to the sampling event and kept with the groundwater samples from Site 1 during field collection, shipment, and laboratory analysis. As provided in Table 9, there were no organic compounds detected in the trip blank sample.

Each of the eight groundwater samples collected at Site 1 were analyzed for Target Compound List (TCL) volatiles. A summary of groundwater analytical results is provided in Table 10. A positive detection summary of VOCs in groundwater obtained at Site 1 is provided in Table 11.

Four VOCs were detected among the eight groundwater samples obtained at Site 1. Chloroethane and xylenes (total) were detected at concentrations of 50 and 0.76 micrograms per liter (µg/L), respectively, in the sample obtained from 01-GW01. Trichloroethene was detected among groundwater samples obtained from shallow monitoring wells 01-GW10 and 01-GW17 at estimated concentrations of 1.6 and 3.6 µg/L, respectively. And 1,2-Dichloroethene (total) was detected at a concentration of 14 µg/L in the sample obtained from shallow monitoring well 01-GW10. Of the five positive VOC detections, only the trichloroethene detection of 3.6 µg/L exceeded the applicable North Carolina Water Quality Standard (NCWQS) of 2.8 µg/L. The federal maximum contaminant level (MCL) for trichloroethene in drinking water is 5.0 µg/L. Figure 5 depicts the locations and concentrations of the VOC detections.

As depicted in Figure 5, the three shallow monitoring wells with positive VOC detections are situated throughout the northern portion of the study area, greater than 350 feet from one another. The lack of positive VOC detections in other wells suggests that VOC contamination in groundwater at Site 1 may be limited to the observed locations. In addition, the lack of positive VOC detections in the sample obtained from deep monitoring well 01-GW17DW suggests that volatile contaminants have not migrated from the surficial aquifer to the deeper Castle Hayne Aquifer.

Positive detections of VOCs have been documented in the past at Site 1. Table 12 provides a summary of VOC results from groundwater samples obtained during the past four years. Previous results indicate the presence of VOCs in samples obtained from monitoring wells 01-GW10, 01-GW12, and 01-GW17. Overall, the latest sampling results show a decrease in both the number and concentrations of VOCs. Due to the nature of contamination at Site 1, the decrease may be a result of natural degradation of organic compounds, natural fluctuations in groundwater levels, or migration of contaminants. One noted exception to the trend is 01-GW01. Until the most recent sampling event, no VOCs had been detected in any samples obtained from well 01-GW01.

Site 28

The sections which follow present analytical results and findings from sampling performed at Site 28 during the first calendar quarter of 1998. Each of the samples collected at Site 28 was analyzed for Target Analyte List (TAL) metals. Analytical results and findings from groundwater, surface water, and sediment sampling are presented separately.

Groundwater Analytical Results

Metals were detected in each of the groundwater samples obtained at Site 28. Although planned, a groundwater sample from 28-GW08 could not be obtained at the time of sample collection; eroded soil from an adjacent construction project rendered the monitoring well inaccessible. Table 13 provides a summary of groundwater analytical results. A positive detection summary of total metals in groundwater samples is presented in Table 14. Figure 6 depicts the locations of total metal results that were detected at concentrations in excess of either NCWQS or MCL.

As depicted in Figure 6, iron, manganese, and thallium were the only total metals detected among the six groundwater samples at concentrations in excess of either NCWQS or MCL. Iron exceeded

the NCWQS of 300 µg/L in samples obtained from five of the six monitoring wells. Iron was detected at concentrations ranging from 288 µg/L to 43,600 µg/L in the sample obtained from monitoring well 28-GW07. Concentrations of manganese ranging from 59.8 to 1,270 µg/L exceeded the NCWQS and MCL of 50 µg/L in all the samples except the one obtained from deep monitoring well 28-GW07DW .

Iron and manganese were detected at their respective maximum concentrations, 43,600 and 1,270 µg/L, in the sample obtained from shallow monitoring well 28-GW07. Shallow monitoring well 28-GW07 is located within the former burn dump area, on the western side of Cogdels Creek. Iron and manganese were detected at levels that exceeded the applicable NCWQS and MCL in each of the four groundwater samples obtained from the shallow aquifer. Although the concentrations of both iron and manganese often exceed established water quality standards, the levels are generally characteristic of natural site conditions. Soils found within the coastal plain of North Carolina are naturally rich in metals, particularly iron and manganese. The observed concentrations of iron and manganese in groundwater may be due more to geologic conditions (i.e., naturally occurring metals bound to unconsolidated soil particles) and sample acquisition methods, and not mobile metal concentrations in the surficial aquifer.

The presence of metals in groundwater is often the result of solids or colloids in aqueous samples. The metals detected among groundwater samples obtained from Site 28 may also be indicative of buried metal material. Buried metal objects have been unearthed during previous investigations at Site 28, primarily west of Cogdels Creek (refer to Figure 2). Buried metal material in the presence of naturally-occurring acidic soils provides another plausible explanation for the observed metal concentrations.

Thallium was the only other total metal identified among groundwater samples from Site 28 that exceeded applicable water quality standards. As depicted in Figure 6, samples obtained from each of the monitoring wells at Site 28 had positive detections of thallium above the 2 µg/L MCL. The associated laboratory method blank, which was analyzed with all the samples obtained from Site 28, had a thallium concentration of 8.5 µg/L. The presence of thallium in the method blank, the frequency at which thallium was detected, and the lack of thallium detections among previous sampling results, suggests that thallium was a laboratory artifact.

The observed concentrations of total metals are believed to be the result of natural site conditions and suspended solids within the groundwater samples. The slight acidity of natural soils, coupled with the natural occurrence of metals and the presence of buried metal material may have also contributed to the observed concentrations of metals. Table 15 presents groundwater sampling results from the past two years. During the past four sampling events, iron and manganese have remained the most prevalent metals among groundwater samples obtained at Site 28. Iron and manganese concentrations have consistently exceeded NCWQS levels in samples obtained from monitoring wells 28-GW01, 28-GW01DW, 28-GW02, 28-GW07, and 28-GW08. To a much lesser extent, antimony and cadmium have been detected at concentrations in excess of applicable screening standards. Thallium has not been detected during any of the previous four sampling events.

Surface Water Analytical Results

Metals were detected in each of the three surface water samples obtained from the New River adjacent to Site 28. Approximate locations of the surface water samples are depicted in Figure 2. Table 16 provides a summary of surface water analytical results. A positive detection summary of metals in the three surface water samples is presented in Table 17.

Laboratory analyses of the three surface water samples obtained from the New River indicate that 14 of 23 total metals were positively detected. As indicated in Table 16, mercury was the only metal detected at concentrations in excess of either state or federal screening criteria. Mercury was detected in the three surface water samples at estimated concentrations of 0.054, 0.067, and 0.098 µg/L. Each of the detections exceeded the screening criteria of 0.025 µg/L. Table 18 presents a summary of all previous analytical results which have exceeded either state or federal screening criteria. As Table 18 suggests, cadmium, copper, and lead have been detected at concentrations in excess of applicable screening criteria during previous sampling events. Mercury has not been detected during any of the previous four sampling events.

Sediment Analytical Results

Three sediment samples were collected in conjunction with the surface water samples obtained from the New River. Laboratory analyses indicate that 14 of the 23 total metals were positively detected among the sediment samples. As indicated in Table 19, none of the metals were detected at concentrations which exceeded applicable screening criteria. A positive detection summary of metals in the three sediment samples is presented in Table 20.

Positive detections of lead among sediment samples obtained adjacent to a pistol firing range, located on the bank of the New River, have been documented in the past. Previous findings have suggested that the presence of lead, in the form of lead shot, among sediment samples is the result of training activities at the adjacent pistol firing range. The most recent analytical results indicate that lead was detected in each of the three sediment samples at concentrations less than 16 milligrams per kilogram (mg/kg). The screening value for lead in sediment is 30.2 mg/kg. Although positively detected, observed concentrations of lead during the past three sampling events do not support the presumption that firing range activities have significantly contributed to the occurrence of lead in New River sediments.

RECOMMENDATIONS

The Record of Decision (ROD) for OU No. 7 stipulates that environmental samples from Sites 1 and 28 be collected periodically to monitor the possible migration of potential site contaminants (Baker, 1995). The sections which follow describe recommendations in support of the selected remedy, periodic monitoring, which have been implemented or are being proposed for future consideration. Details pertaining to the implemented recommendations have been presented within previous semiannual reports. The intent of this report is to provide a brief listing of implemented actions and a thorough description of any proposed recommendations.

Implemented Recommendations

Bollards and protective casings of monitoring wells installed during the 1984 Confirmation Study were repainted with weather resistant paint in February 1997. Rust and peeling paint were removed prior to application of the new paint. In addition, new padlocks that operate with a universal key were installed on each monitoring well at Sites 1 and 28.

Proposed Recommendations

Based upon the observations and findings presented in this and previous semiannual reports, the following recommendations for the OU No. 7 monitoring program are provided. If non-significant

changes are made to a component of the selected remedy, described in the ROD (Baker, 1995), the changes must be recorded in a post-decision document file. If significant changes are made to a component of the selected remedy, the changes will need to be presented in an Explanation of Significant Differences document.

Discontinue Site 1 Monitoring Activities

Vinyl chloride and trichloroethene (TCE) were identified as contaminants of concern during the 1994 Remedial Investigation (RI) of Site 1. Vinyl chloride was detected at concentrations of 2.0 and 4.0 µg/L in separate groundwater samples obtained from shallow monitoring well 01-GW10. In addition, TCE was detected in the same samples obtained from 01-GW10 at concentrations of 4.0 and 8.0 µg/L. Trichloroethene was also detected at concentrations of 3.0 and 9.0 µg/L in samples obtained from shallow monitoring well 01-GW17. The NCWQS vinyl chloride is 0.015 µg/L and the MCL is 2.0 µg/L. The NCWQS for TCE is 2.8 µg/L and the MCL is 5.0 µg/L. No other VOCs were detected at concentrations in excess of either state or federal screening standards during the 1994 investigation.

Due to the presence of vinyl chloride and TCE at Site 1, periodic groundwater monitoring activities were initiated in 1995. In addition to 01-GW10 and 01-GW17, seven additional monitoring wells were selected to monitor the potential migration of the identified VOCs. As of January 1998, five sampling events had been completed as part of the OU No. 7 monitoring program. During the monitoring program, only TCE has been detected at concentrations that have exceeded either the state or federal screening standards. Trichloroethene has been detected intermittently in groundwater samples obtained from shallow monitoring wells 01-GW10 and 01-GW17. The observed concentrations of TCE have exceeded the NCWQS (2.8 µg/L), but have been less than the MCL (5.0 µg/L). No other VOCs have been detected at concentrations that have exceeded either the NCWQS or MCL during the monitoring program.

During the monitoring program, TCE has been detected three times at concentrations of 4.0, 3.0 and 1.6 µg/L among samples obtained from 01-GW10. Among samples obtained from 01-GW17, TCE has been detected twice, at concentrations of 3.0 and 3.6 µg/L. Attachment D presents a statistical analysis of data generated during the monitoring program. Using one-half the method detection limit for non-detections, the mean TCE detection in groundwater samples obtained from 01-GW10 is 1.82 µg/L. The mean TCE detection in samples obtained from 01-GW17 is 1.47 µg/L. Based upon the confidence intervals computed in Attachment D, there is a 95 percent likelihood that the true mean TCE concentration in 01-GW10 is less than 3.89 µg/L and less than 3.56 µg/L in 01-GW17. In other words, the mean TCE concentrations in 01-GW10 and 01-GW17 are presumably less than the MCL of 5.0 µg/L and only slightly greater than the NCWQS of 2.8 µg/L.

A clear decrease in vinyl chloride and TCE concentrations has occurred since 1994 -- vinyl chloride has not been detected at all during the past five sampling events. Concentrations of TCE in samples obtained from 01-GW10 have decreased from 4.0 µg/L to 1.6 µg/L in the last three years. Since 1994, concentrations of TCE in samples obtained from 01-GW17 have decreased from 27 µg/L to 3.6 µg/L. In addition, Site 1 is not located within 1,000 feet of any potable supply wells. Based upon this information, it is recommended that monitoring activities be discontinued at Site 1. If additional confirmatory groundwater samples are required, it is recommended that samples be obtained from 01-GW10 and 01-GW17 only.

Discontinue Site 28 Monitoring Activities

Metals have been detected in each groundwater, surface water, and sediment sample obtained at Site 28 during the monitoring program. The presence of metals at Site 28 are most likely the result of one or more of the following: natural site conditions, buried metal debris coupled with naturally acidic soils, suspended material in the liquid samples, and metals migrating via the New River.

The coastal plain environment of North Carolina is naturally rich in metals. As a result, aluminum, antimony, cadmium, copper, iron, lead, and manganese have been detected at concentrations in excess of either state or federal screening criteria among the many environmental samples obtained during the monitoring program. Iron and manganese have remained the most prevalent metals among all environmental samples obtained at Site 28. Iron and manganese concentrations have consistently exceeded both screening standards and criteria among groundwater and surface water samples, respectively. To a much lesser extent, aluminum, antimony, cadmium, copper, and lead have occasionally been detected at concentrations in excess of applicable screening criteria. However, the observed concentrations are not indicative of metals disposal activities and do not pose an imminent threat to human health and the environment. Based upon the accumulated information presented in this and previous monitoring reports, it is recommended that monitoring activities be discontinued at Site 28.

REFERENCES

Baker Environmental, Inc. (Baker). December 1995. Record of Decision for Operable Unit No. 7 (Sites 1, 28 and 30). Final. Prepared for the Navy Atlantic Division Naval Facilities Engineering Command, Norfolk, Virginia.

Baker Environmental, Inc. (Baker). December 1996. Long-Term Monitoring Work Plans for Remedial Investigation Sites. Prepared for the Navy Atlantic Division Naval Facilities Engineering Command, Norfolk, Virginia.

TABLES

TABLE 1

SUMMARY OF WELL CONSTRUCTION DETAILS
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Monitoring Well Number	Date Installed	Top of Casing Elevation (feet, msl)	Ground Surface Elevation (feet, msl)	Boring Depth (feet, msl)	Well Depth (feet, msl)	Screen Interval Depth (feet, bgs)	Depth to Bentonite (feet, bgs)	Depth to Sand Pack (feet, bgs)	Stick-Up (feet, ags)
01-GW01	1984	16.50	13.3	NA	24.0	NA	NA	NA	3.2
01-GW02	1984	17.95	15.7	NA	23.0	9.0 - 23.0	NA	NA	2.3
01-GW03	1984	21.78	19.7	NA	23.0	9.0 - 23.0	NA	NA	2.1
01-GW10	1994	18.07	15.3	24.0	24.0	9.1 - 23.4	5.0	7.0	2.8
01-GW11	1994	13.18	10.4	17.0	17.0	2.0 - 16.4	0.5	1.0	2.8
01-GW12	1994	16.33	13.8	17.0	17.0	3.1 - 17.3	0.5	2.0	2.5
01-GW17	1994	23.00	20.1	25.0	25.0	10.0 - 24.3	6.0	8.0	3.0
01-GW17DW	1994	21.91	19.1	122	122	105 - 120	92.0	97.0	2.8

Notes:

ags = above ground surface
msl = mean sea level
bgs = below ground surface
NA = Information not available

TABLE 2

SUMMARY OF WELL CONSTRUCTION DETAILS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Monitoring Well Number	Date Installed	Top of Casing Elevation (feet, msl)	Ground Surface Elevation (feet, msl)	Boring Depth (feet, msl)	Well Depth (feet, msl)	Screen Interval Depth (feet, bgs)	Depth to Bentonite (feet, bgs)	Depth to Sand Pack (feet, bgs)	Stick-Up (feet, ags)
28-GW01	1994	7.34	4.8	17.0	17.0	2.5 - 16.2	0.0	1.5	2.5
28-GW01DW	1994	7.49	5.5	134	133	117 - 132	107	111	2.1
28-GW02	1984	5.96	4.8	NA	16.5	2.5 - 16.5	NA	NA	1.6
28-GW04	1984	8.17	4.4	NA	29.0	NA	NA	NA	3.8
28-GW07	1994	6.62	3.8	18.0	18.0	2.5 - 17.5	0.0	0.5	2.8
28-GW07DW	1994	6.03	3.6	132	131	114 - 129	104	109	2.4
28-GW08	1995	14.16	11.6	24.0	24.0	7.9 - 22.7	4.0	6.0	2.6

Notes:

ags = above ground surface
msl = mean sea level
bgs = below ground surface
NA = Information not available

TABLE 3

SUMMARY OF GROUNDWATER FIELD PARAMETERS
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well Number (Sample Date)	Measuring Time	Well Volumes	Field Parameters				
			Dissolved Oxygen (mg/L)	Specific Conductance (µmhos/cm)	Temperature (°C)	pH (S.U.)	Turbidity (N.T.U.)
01-GW01 (01/21/98)	1411	1.0	2.4	540	17.9	6.87	38
	1422	2.0	2.5	542	17.5	7.04	20
	1433	3.0	2.4	527	17.4	7.09	15
	1444	4.0	2.4	523	17.7	7.09	12
01-GW02 (01/21/98)	1651	1.0	2.3	464	16.1	7.02	88
	1705	2.0	1.1	493	16.3	7.05	37
	1716	3.0	1.1	492	17.0	7.01	8.2
	1730	4.0	1.2	494	16.9	7.00	7.8
01-GW03 (01/21/98)	1530	1.0	4.1	170	17.8	6.60	71
	1542	2.0	3.4	163	18.8	5.92	14
	1553	3.0	3.8	162	18.7	5.83	6.2
	1606	4.0	3.3	160	18.6	5.74	2.4
01-GW10 (01/21/98)	1310	1.0	2.6	705	17.0	6.97	26
	1322	2.0	2.7	611	18.9	7.05	14
	1334	3.0	2.7	623	18.7	7.05	9.4
	1346	4.0	2.7	632	18.8	7.06	9.4
01-GW11 (01/21/98)	1608	1.0	2.8	312	14.5	5.81	70
	1616	2.0	2.4	364	14.3	6.22	30
	1624	3.0	2.3	372	14.1	6.75	22
	1632	4.0	2.3	400	14.7	6.81	15
	1640	5.0	2.4	401	14.9	6.84	12
	1648	6.0	2.4	409	15.0	6.88	11
01-GW12 (01/21/98)	1510	1.0	2.6	324	15.0	5.18	153
	1519	2.0	2.1	289	15.2	5.63	31
	1528	3.0	2.2	271	15.5	5.69	12
	1537	4.0	2.1	275	15.0	5.76	5.2
01-GW17 (01/21/98)	1207	1.0	3.3	564	17.1	7.72	5.1
	1228	2.0	2.5	533	17.3	7.63	2.5
	1246	3.0	2.1	550	18.6	7.60	1.2
	1306	4.0	2.2	564	18.6	7.58	1.0
01-GW17DW (01/21/98)	1243	1.0	1.8	234	18.4	8.34	1.4
	1315	1.5	1.6	235	18.1	8.32	1.2
	1348	2.0	1.3	221	17.8	8.60	0.7
	1415	2.5	1.0	216	18.4	8.59	0.6
	1443	3.0	1.4	213	18.4	8.59	1.4

Notes:

N.T.U. = Nephelometric Turbidity Units
S.U. = Standard Units
µmhos/cm = micro ohms per centimeter
°C = Degrees Centigrade
mg/L = Milligrams per liter

TABLE 4

SUMMARY OF GROUNDWATER FIELD PARAMETERS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well Number (Sample Date)	Measuring Time	Well Volumes	Field Parameters				
			Dissolved Oxygen (mg/L)	Specific Conductance (µmhos/cm)	Temperature (°C)	pH (S.U.)	Turbidity (N.T.U.)
28-GW01 (02/20/98)	0958	1.0	1.6	680	12.0	7.69	3.3
	1014	2.0	1.6	940	12.9	7.80	1.7
	1030	3.0	1.6	980	12.8	7.81	1.3
	1050	4.0	1.5	931	12.7	7.74	1.1
28-GW01DW (01/20/98)	1007	1.0	1.3	4,866	17.2	7.98	1.6
	1036	1.5	1.3	4,840	17.4	7.98	1.5
	1103	2.0	1.0	4,919	17.9	7.95	1.4
	1132	2.5	1.1	4,939	17.8	7.98	1.9
	1202	3.0	1.0	4,935	17.8	7.97	1.0
28-GW02 (01/21/98)	1004	1.0	2.0	879	16.0	8.02	12
	1018	1.5	2.0	881	15.9	8.10	8.1
	1025	2.0	2.0	897	15.4	8.11	5.4
	1032	2.5	2.3	903	15.2	8.07	5.5
	1040	3.0	2.1	909	15.3	8.06	4.5
28-GW04 (01/20/98)	1714	1.0	1.4	660	13.6	7.47	6.0
	1725	1.5	0.9	692	14.1	7.33	3.3
	1731	2.0	0.8	702	14.3	7.34	2.6
	1741	2.5	0.7	691	14.1	7.37	1.7
	1748	3.0	0.8	671	14.1	7.34	1.5
28-GW07 (01/20/98)	1339	1.0	1.8	1,378	12.9	6.99	3.9
	1359	2.0	1.4	1,279	11.9	7.10	2.7
	1418	3.0	1.3	1,185	11.7	7.19	2.6
	1435	4.0	1.6	1,189	11.6	7.22	2.6
28-GW07DW (01/20/98)	1414	1.0	1.3	255	16.5	8.78	4.8
	1440	1.5	1.1	272	16.1	8.88	2.3
	1506	2.0	1.0	235	17.6	9.22	2.6
	1533	2.5	1.8	239	17.7	9.30	2.7
	1602	3.0	1.9	245	17.7	9.26	2.4

Notes:

N.T.U. = Nephelometric Turbidity Units
S.U. = Standard Units
µmhos/cm = micro ohms per centimeter
°C = Degrees Centigrade
mg/L = milligrams per liter

TABLE 5

SAMPLING SUMMARY
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Location	Media	TCL Volatiles[1]	Laboratory Sample Identification
01-GW01	Groundwater	X	IR01-GW01-98A
01-GW02	Groundwater	X	IR01-GW02-98A
01-GW03	Groundwater	X	IR01-GW03-98A
01-GW10	Groundwater	X	IR01-GW10-98A
01-GW11	Groundwater	X	IR01-GW11-98A
01-GW12	Groundwater	X	IR01-GW12-98A
01-GW17	Groundwater	X	IR01-GW17-98A
01-GW17DW	Groundwater	X	IR01-GW17DW-98A

Notes:

(1) Target Compound List Volatiles by U.S. Environmental Protection Agency, Analytical Method 8260A.

X = Requested analysis

TABLE 6

SAMPLING SUMMARY
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Location	Media	TAL Metals[1]	Laboratory Sample Identification
28-GW01	Groundwater	X	IR28-GW01-98A
28-GW01DW	Groundwater	X	IR28-GW01DW-98A
28-GW02	Groundwater	X	IR28-GW02-98A
28-GW04	Groundwater	X	IR28-GW04-98A
28-GW07	Groundwater	X	IR28-GW07-98A
28-GW07DW	Groundwater	X	IR28-GW07DW-98A
28-GW08	Groundwater	X	IR28-GW08-98A
28-SW01	Surface Water	X	IR28-SW01-98A
28-SW02	Surface Water	X	IR28-SW02-98A
28-SW03	Surface Water	X	IR28-SW03-98A
28-SD01	Sediment	X	IR28-SD01-98A
28-SD02	Sediment	X	IR28-SD02-98A
28-SD03	Sediment	X	IR28-SD03-98A

Notes:

[1] Target Analyte List Metals by U.S. Environmental Protection Agency, Contract Laboratory Protocol, Statement of Work, Document Number ILM03.0.

X = Requested analysis

TABLE 7

SUMMARY OF WATER LEVEL MEASUREMENTS
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well ID	Reference Elevation [1]	SWE (Date 07/30/96)	SWE (Date 02/24/97)	SWE (Date 08/08/97)	SWL (Date 01/21/98)	SWE (Date 01/21/98)
01-GW01	16.50	9.04	8.90	7.43	7.70	8.80
01-GW02	17.95	8.43	8.35	6.79	9.65	8.30
01-GW03	21.78	8.37	8.51	6.77	13.35	8.43
01-GW10	18.07	7.01	6.70	5.32	12.66	5.41
01-GW11	13.18	8.28	7.93	6.48	5.26	7.92
01-GW12	16.33	9.65	9.43	7.83	6.94	9.39
01-GW17	23.00	8.75	8.71	7.26	14.45	8.55
01-GW17DW	21.91	8.67	8.72	7.33	13.38	8.53

Notes:

[1] Top of well casing expressed in feet above mean sea level

SWL = Static water level taken from top of well casing
SWE = Static water elevation expressed in feet above mean sea level

TABLE 8

SUMMARY OF WATER LEVEL MEASUREMENTS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well ID	Reference Elevation [1]	SWE (Date 07/30/96)	SWE (Date 02/07/97)	SWE (Date 08/11/97)	SWL (Date 01/20/98)	SWE (Date 01/20/98)
28-GW01	7.34	2.36	2.18	0.90	4.74	2.60
28-GW01DW	7.49	1.71	1.92	0.60	5.86	1.63
28-GW02	5.96	2.24	1.75	1.04	3.93	2.03
28-GW03	5.90	3.14	3.05	2.10	2.86	3.04
28-GW04	8.17	3.32	2.98	1.86	5.04	3.13
28-GW05	15.47	NA	NA	NA	10.96	4.51
28-GW06	19.98	2.43	4.57	0.60	17.64	2.34
28-GW07	6.62	3.24	2.41	1.25	2.87	3.75
28-GW07DW	6.03	2.71	2.57	1.52	3.45	2.58
28-GW08	13.27	1.78	0.56	0.78	NA	NA

Notes:

[1] Top of well casing expressed in feet above mean sea level

NA = Well Not Accessible or Data Not Available
SWL = Static water level taken from top of well casing
SWE = Static water elevation expressed in feet above mean sea level

TABLE 9

TRIP BLANK ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR01-TB01-98A
DATE SAMPLED	01-22-1998
VOLATILES (ug/l)	
Ethylbenzene	5 U
Styrene	5 U
cis-1,3-Dichloropropene	5 U
trans-1,3-Dichloropropene	5 U
1,2-Dichloroethane	5 U
4-Methyl-2-pentanone	20 U
Toluene	5 U
Chlorobenzene	5 U
Dibromochloromethane	5 U
Tetrachloroethene	5 U
Xylenes (total)	5 U
1,2-Dichloroethene (total)	5 U
Carbon tetrachloride	5 U
2-Hexanone	20 U
Acetone	20 U
Chloroform	5 U
Benzene	5 U
1,1,1-Trichloroethane	5 U
Bromomethane	10 U
Chloromethane	10 U
Chloroethane	10 U
Vinyl chloride	10 U
Methylene chloride	5 U
Carbon disulfide	5 U
Bromoform	5 U
Bromodichloromethane	5 U
1,1-Dichloroethane	5 U
1,1-Dichloroethene	5 U
1,2-Dichloropropane	5 U
2-Butanone	20 U
1,1,2-Trichloroethane	5 U
Trichloroethene	5 U
1,1,2,2-Tetrachloroethane	5 U

U = Not Detected
ug/L = Micrograms per liter

TABLE 10

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Fraction	Detected Contaminants	Comparison Criteria		Concentration Range		Location of Maximum Detection	Detection Frequency	Detections Above	
		NCWQS	MCL	Min.	Max.			NCWQS	MCL
Volatile Organics	1,2-Dichloroethene (total)	70	70	14	14	01-GW10	1/8	0/8	0/8
	Chloroethane	NE	NE	50	50	01-GW01	1/8	NA	NA
	Trichloroethene	2.8	5.0	1.6 J	3.6 J	01-GW17	2/8	1	0
	Xylenes (Total)	530	10,000	0.76 J	0.76 J	01-GW01	1/8	0/8	0/8

Notes:

Concentrations presented in micrograms per liter (µg/L) or parts per billion.

J = Estimated Result
MCL = Federal Maximum Contaminant Level. Maximum permissible level of a contaminant in water which is delivered to users of public water systems (U.S. Environmental Protection Agency - Drinking Water Regulations and Health Advisories).
NA = Not Applicable
NCWQS = North Carolina Water Quality Standards (North Carolina Administrative Code, Title 15A, Subchapter 2L).
NE = Not Established

TABLE 11

POSITIVE DETECTIONS IN GROUNDWATER
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR01-GW01-98A	IR01-GW10-98A	IR01-GW17-98A
DATE SAMPLED	01-21-1998	01-21-1998	01-21-1998
VOLATILES (ug/l)			
Xylenes (total)	0.76 J	5 U	5 U
1,2-Dichloroethene (total)	5 U	14	5 U
Chloroethane	50	10 U	10 U
Trichloroethene	5 U	1.6 J	3.6 J

U = Not Detected

J = Estimated value

ug/L = Micrograms per liter

TABLE 12

VOLATILE COMPOUNDS IN GROUNDWATER
AUGUST 1995 - JANUARY 1998
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Monitoring Well/ Volatile Compound	MCL	NCWQS	August, 1995	July, 1996	February, 1997	August, 1997	January, 1998
01-GW01							
Xylenes (total)	10,000	530	ND	ND	ND	ND	0.8 J
Chloroethane	NE	ND	ND	ND	ND	ND	50
01-GW02	NA	NA	ND	ND	ND	ND	ND
01-GW03	NA	NA	ND	ND	ND	ND	ND
01-GW10							
1,2-Dichloroethene(Total)	70	70	23	19	16	16	14
Trichloroethene	5.0	2.8	4.0	ND	3.0 J	ND	1.6 J
01-GW11	NA	NA	ND	ND	ND	ND	ND
01-GW12							
Toluene	1,000	1,000	4.0	ND	ND	ND	ND
Ethylbenzene	700	29	4.0	ND	ND	ND	ND
Xylenes	10,000	530	150	6.0 J	ND	280	ND
01-GW17							
Trichloroethene	5.0	2.8	ND	ND	3.0 J	ND	3.6 J
01-GW17DW	NA	NA	ND	ND	ND	ND	ND

Notes:

Concentrations expressed in micrograms per liter (µg/L) or parts per billion.

MCL = Federal Maximum Contaminant Level. Maximum permissible level of a contaminant in water which is delivered to any user of a public water system. (U.S. Environmental Protection Agency - Drinking Water Regulations and Health Advisories.)
NA = Not Applicable
NCWQS = North Carolina Water Quality Standards. Values Applicable to Groundwater (North Carolina Administrative Code, Title 15A, Subchapter 2L).
ND = Not detected above screening value.
NE = Not Established

TABLE 13

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Fraction	Detected Analytes	Comparison Criteria		Concentration Range		Location of Maximum Detection	Detection Frequency	Detections Above	
		NCWQS	MCL	Min.	Max.			NCWQS	MCL
Total	Aluminum	NE	200 (1)	28 J	54 J	28-GW07	2/6	NA	0
	Barium	2,000	2,000	20 J	809	28-GW02	6/6	0	0
	Chromium	50	100	3.9 J	8.2 J	28-GW01	5/6	0	0
	Copper	1,000	1,300	3.5 J	4.7 J	28-GW02	3/6	0	0
	Iron	300	300 (1)	288	43,600	28-GW07	6/6	5	5
	Manganese	50	50 (1)	15	1,270	28-GW07	6/6	5	5
	Mercury	1.1	2.0	0.04 J	0.11 J	28-GW07	5/6	0	0
	Thallium (2)	NE	2.0	2.9 J	4.5 J	28-GW01	6/6	NA	6
	Zinc	2,100	5,000 (1)	2.7 J	23	28-GW02	6/6	0	0

Notes:

Concentrations presented in micrograms per liter (µg/L) or parts per billion.

(1) - Secondary Federal Maximum Contaminant Level (Refer to MCL Note Below).

(2) - Thallium was detected in the associated method blank at an estimated concentration of 8.5 µg/L.

J = Estimated Result

MCL = Federal Maximum Contaminant Level. Maximum permissible level of a contaminant in water which is delivered users of public water systems (U.S. Environmental Protection Agency - Drinking Water Regulations and Health Advisories).

NA = Not applicable

NCWQS = North Carolina Water Quality Standards (North Carolina Administrative Code, Title 15A, Subchapter 2L).

NE = Not Established

TABLE 14

POSITIVE DETECTIONS IN GROUNDWATER
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR28-GW01-98A	IR28-GW01DW-98A	IR28-GW02-98A	IR28-GW04-98A	IR28-GW07-98A	IR28-GW07DW-98A
DATE SAMPLED	01-20-1998	01-20-1998	01-21-1998	01-20-1998	01-20-1998	01-20-1998
TOTAL METALS (ug/l)						
Aluminum	200 U	200 U	200 U	200 U	54.4 J	28.3 J
Barium	155 J	20.2 J	809	98 J	166 J	22.2 J
Calcium	154000	124000	64600	88200	256000	59200
Chromium	8.2 J	6.3 J	10 U	4.1 J	8 J	3.9 J
Cobalt	50 U	50 U	50 U	50 U	10.1 J	50 U
Copper	3.5 J	25 U	4.7 J	25 U	3.5 J	25 U
Iron	822	413	5910	665	43600	288
Magnesium	15200	26800	27800	6540	19800	957 J
Manganese	113	131	197	59.8	1270	15.1
Mercury	0.053 J	0.035 J	0.038 J	0.057 J	0.11 J	0.2 U
Potassium	14400	25000	52600	1650 J	2950 J	1730 J
Sodium	54800	1060000	89200	62900	50000	7480
Thallium	4.5 J	4 J	4.3 J	2.9 J	3.7 J	3.3 J
Vanadium	25.8 J	20.8 J	13.7 J	19.3 J	34.2 J	15.5 J
Zinc	7.7 J	2.7 J	23	7.2 J	9.2 J	19.2 J

J = Estimated result

U = Not detected

ug/L = Micrograms per liter

TABLE 15

METALS IN GROUNDWATER ABOVE SCREENING STANDARDS
AUGUST 1995 - JANUARY 1998
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Monitoring Well/ Volatile Compound	MCL	NCWQS	August 1995	July 1996	February 1997	August 1997	January 1998
28-GW01							
Antimony	6	NA	ND	ND	25	NA	NA
Iron	300	300	1,690	1,840	1,930	1,150	822
Manganese	NA	50	120	250	214	66.2	113
28-GW01DW							
Iron	300	300	ND	364	374	NA	413
Manganese	NA	50	92.8	109	119	113	131
28-GW02							
Antimony	6	NA	ND	14.7	ND	ND	ND
Iron	300	300	4,080	4,320	5,150	5,090	5,910
Manganese	NA	50	191	174	185	196	197
28-GW04							
Aluminum	NA	200	ND	121	ND	ND	ND
Iron	300	300	NA	NA	NA	NA	665
Manganese	NA	50	56.1	67	ND	48.9	59.8
28-GW07							
Antimony	6	NA	ND	19.2	23.6	44.5	ND
Cadmium	5	5	10.7	ND	ND	NA	ND
Iron	300	300	23,000	36,300	26,600	24,900	43,600
Manganese	NA	50	431	860	460	906	1,270
28-GW08							
Iron	NA	300	1,180	3,910	4,000	7,470	NC
Manganese	NA	50	160	212	175	319	NC

Notes:

Concentrations expressed in micrograms per liter (µg/L) or parts per billion.

MCL = Federal Maximum Contaminant Level. Maximum permissible level of a contaminant in water which is delivered to any user of a public water system. (U.S. Environmental Protection Agency - Drinking Water Regulations and Health Advisories.)
NA = Not applicable or analyte detected at a concentration less than screening standard.
NCWQS = North Carolina Water Quality Standards. Values Applicable to Groundwater (North Carolina Administrative Code, Title 15A, Subchapter 2L).
NC = Sample not collected
ND = Not Detected
NE = Not Established

TABLE 16

SUMMARY OF SURFACE WATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Fraction	Detected Analytes	Comparison Criteria		Concentration Range		Location of Maximum Detection	Detection Frequency	Detections Above	
		NCWQS	Region IV	Min.	Max.			NCWQS	Region IV
Total Metals	Aluminum	NE	NE	98 J	130 J	28-SW03	3/3	NA	NA
	Antimony	NE	NE	34.5 J	34.5 J	28-SW01	1/3	NA	NA
	Barium	NE	NE	11.5 J	14.4 J	28-SW01	3/3	NA	NA
	Beryllium	NE	0.53	0.35 J	0.46 J	28-SW02	3/3	NA	0
	Chromium	20	50	3.6 J	3.6 J	28-SW01	1/3	0	0
	Iron	NE	NE	240	398	28-SW03	3/3	NA	NA
	Manganese	NE	NE	11.7 J	12.2 J	28-SW03	3/3	NA	NA
	Mercury	0.025	0.025	0.05 J	0.10 J	28-SW03	3/3	3	3
	Thallium [1]	NE	NE	4.2 J	5.0 J	28-SW02	2/3	NA	NA
	Zinc	86	86	3.2 J	8.0 J	28-SW01	3/3	0	0

Notes:

Concentrations presented in micrograms per liter (µg/L) or parts per billion.

J = Estimated Result
NA = Not Applicable
NCWQS = North Carolina Water Quality Standards (North Carolina Administrative Code, Title 15A, Subchapter 2B, Rule .0220).
NE = Not Established
Region IV = U.S. Environmental Protection Agency, Region IV - Surface Water Screening Values Protective of Saltwater Aquatic Life.

TABLE 17

POSITIVE DETECTIONS IN SURFACE WATER
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR28-SW01-98A	IR28-SW02-98A	IR28-SW03-98A
DATE SAMPLED	01-21-1998	01-21-1998	01-21-1998
TOTAL METALS (ug/l)			
Aluminum	98.3 J	121 J	130 J
Antimony	34.5 J	60 U	60 U
Barium	14.4 J	11.5 J	12.9 J
Beryllium	0.45 J	0.46 J	0.35 J
Calcium	163000	145000	149000
Chromium	3.6 J	10 U	10 U
Iron	240	329	398
Magnesium	469000	415000	429000
Manganese	11.7 J	12 J	12.2 J
Mercury	0.054 J	0.067 J	0.098 J
Potassium	164000	142000	149000
Sodium	4560000	3990000	4110000
Thallium	4.2 J	5 J	10 U
Zinc	8 J	4.7 J	3.2 J

J = Estimated result

U = Not detected

ug/l = Micrograms per liter

TABLE 18

METALS IN SURFACE WATER ABOVE SCREENING CRITERIA
JULY 1996 - JANUARY 1998
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sampling Station/Analyte	NCWQS	Region IV	July, 1996	February, 1997	August, 1997	January, 1998
28-SW01						
Cadmium	5.0	9.3	ND	NA	ND	ND
Copper	3.0	2.9	8.9	ND	NA	ND
Lead	25	8.5	38	ND	ND	ND
Mercury	0.025	0.025	ND	ND	ND	0.054 J
28-SW02						
Cadmium	5.0	9.3	ND	6.3	ND	ND
Copper	3.0	2.9	5.9	ND	NA	ND
Lead	25	8.5	15	NA	ND	ND
Mercury	0.025	0.025	ND	ND	ND	0.067 J
28-SW03						
Cadmium	5.0	9.3	ND	6.1	ND	ND
Copper	3.0	2.9	28	NA	NA	ND
Lead	25	8.5	60	NA	ND	ND
Mercury	0.025	0.025	ND	ND	ND	0.098 J

Notes:

Concentrations presented in micrograms per liter (µg/L) or parts per billion.

NA = Not Applicable or analyte detected at a concentration less than screening criteria.
NCWQS = North Carolina Salt Water Quality Standards (North Carolina Administrative Code, Title 15A, Subchapter 2B).
ND = Not Detected
Region IV = U.S. Environmental Protection Agency, Region IV - Surface Water Screening Values Protective of Aquatic Life.

TABLE 19

SUMMARY OF SEDIMENT ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Fraction	Detected Analytes	NOAA	Concentration Range		Location of Maximum Detection	Detection Frequency	Detections Above Comparison Criteria
			Min.	Max.			
Metals	Aluminum	NE	784	1,060	28-SD03	3/3	NA
	Arsenic	7.2	1.0 J	1.0 J	28-SD03	2/3	0
	Barium	NE	2.4 J	2.4 J	All Three Same	3/3	NA
	Chromium	52.3	1.0 J	3.1	28-SD03	3/3	0
	Copper	18.7	1.4 J	9.4	28-SD03	3/3	0
	Iron	NE	512	1,050	28-SD03	3/3	NA
	Lead	30.2	10.0	15.9	28-SD03	3/3	0
	Manganese	NE	4.4	6.7	28-SD03	3/3	NA
	Mercury	0.13	0.03 J	0.03 J	28-SD03	2/3	0
	Vanadium	NE	3.5 J	4.6 J	28-SD02	3/3	NA
	Zinc	124	6.1	13.7	28-SD03	3/3	0

Notes:

Concentrations presented in milligrams per kilogram (mg/kg) or parts per million.

J = Estimated Result
NA = Not applicable
NE = Not Established
NOAA = U.S. Environmental Protection Agency, Region IV - Adoption of Risk-Based Values for Aquatic Life from the National Oceanic and Atmospheric Administration (NOAA).

TABLE 20

POSITIVE DETECTIONS IN SEDIMENT
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

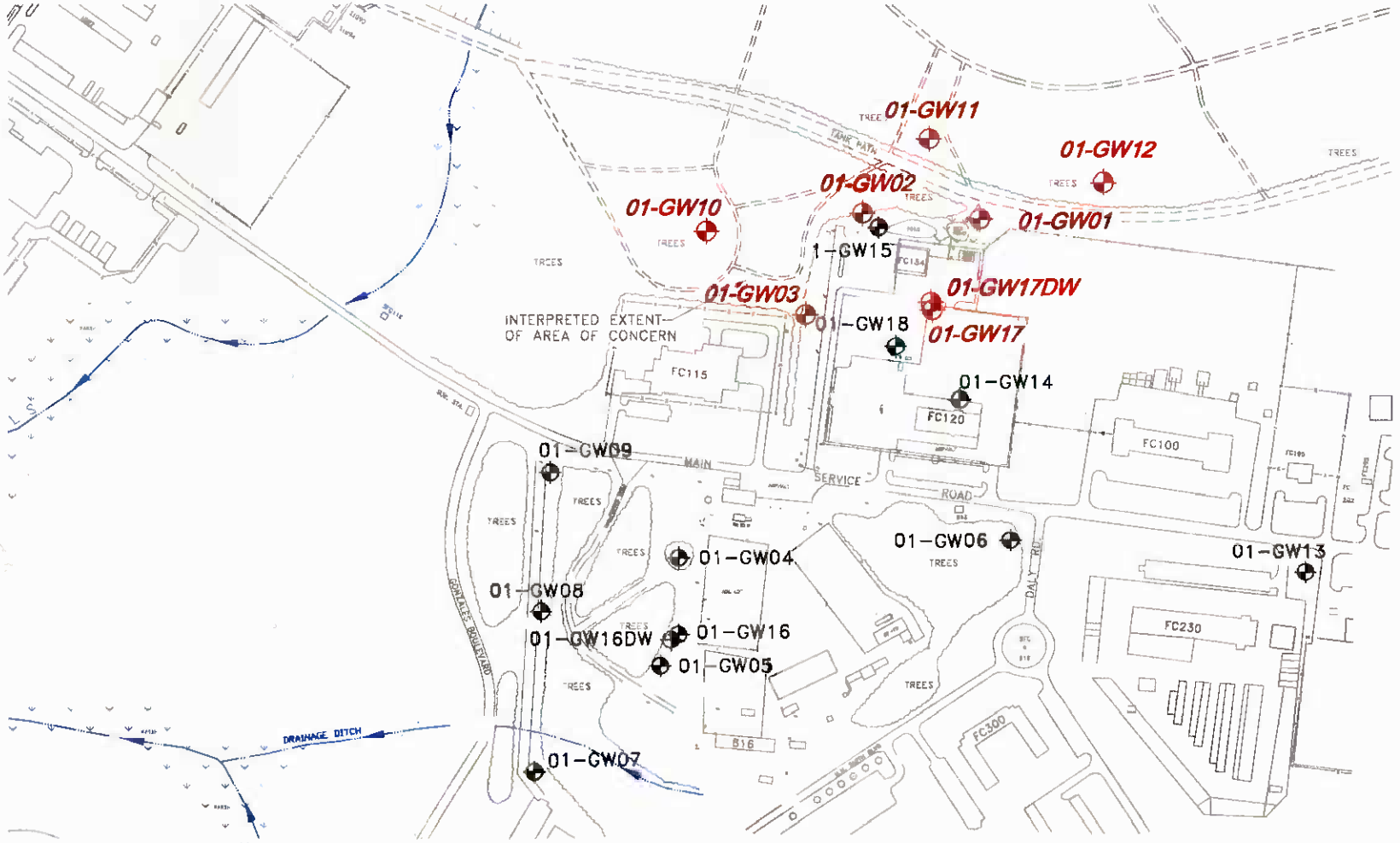
SAMPLE ID	IR28-SD01-98A	IR28-SD02-98A	IR28-SD03-98A
DATE SAMPLED	01-21-1998	01-21-1998	01-21-1998
METALS (mg/kg)			
Aluminum	784	809	1060
Arsenic	2.7 U	0.99 J	1 J
Barium	2.4 J	2.4 J	2.4 J
Calcium	213 J	292 J	300 J
Chromium	0.95 J	1.7 J	3.1
Copper	1.4 J	7.1 J	9.4
Iron	512	722	1050
Lead	10	10.7	15.9
Magnesium	338 J	353 J	354 J
Manganese	4.4	4.7	6.7
Mercury	0.13 U	0.031 J	0.032 J
Sodium	1830	1740	1360
Vanadium	3.5 J	4.6 J	3.8 J
Zinc	7.2	6.1	13.7
WET CHEMISTRY (%)			
Percent Moisture	25.9	33.4	19.5

J = Estimated result

U = Not detected

mg/kg = milligrams per kilogram

FIGURES



NOTES:
1.) SAMPLING LOCATIONS SHOWN IN SMALLER TYPE NOT PART OF MONITORING PROGRAM.
2.) MONITORING WELLS 01-GW15 AND 01-GW18 WERE DESTROYED.
3.) MONITORING WELL 01-GW05 WAS ABANDONED.

LEGEND

01-GW07 – SHALLOW MONITORING WELL

01-GW16DW – DEEP MONITORING WELL

DIRECTION OF SURFACE WATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992 AND W.K. DICKSON & ASSOC., JUNE 1994

Baker

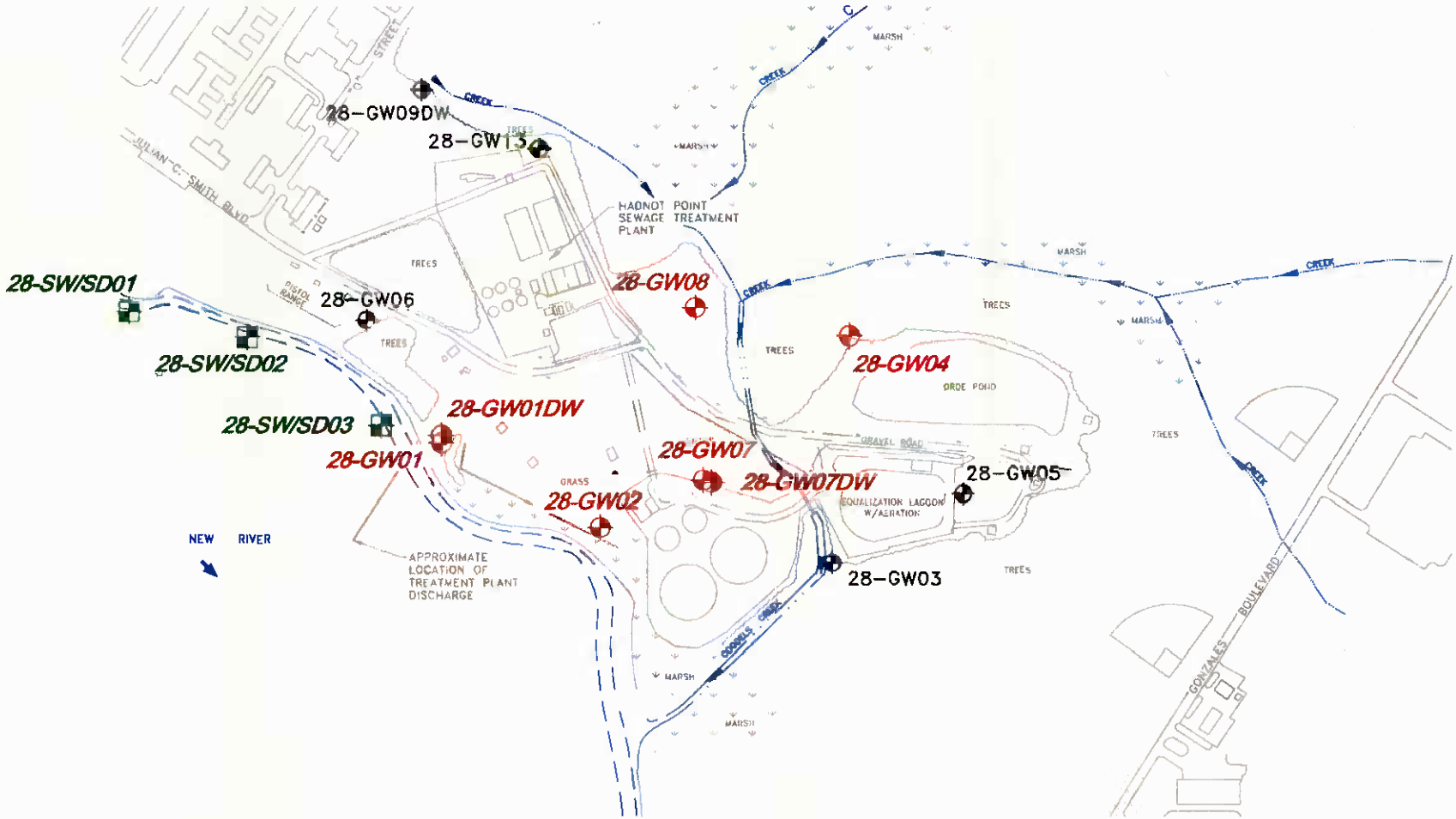
Baker Environmental, Inc.

FIGURE 1
SAMPLING LOCATION MAP
OPERABLE UNIT NO. 7 – SITE 1
MONITORING AND O&M SUPPORT, CTO – 0367

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

J67513WP

0207.11.BLK



NOTE:
1.) SAMPLING LOCATIONS SHOWN IN SMALLER TYPE NOT PART OF MONITORING PROGRAM.

500 0 250 500
1 inch = 500 ft.

Baker
Baker Environmental, Inc.

LEGEND

28-GW01 – SHALLOW MONITORING WELL

28-GW01DW – DEEP MONITORING WELL

28-SW/SD01 – SURFACE WATER AND SEDIMENT SAMPLE STATION

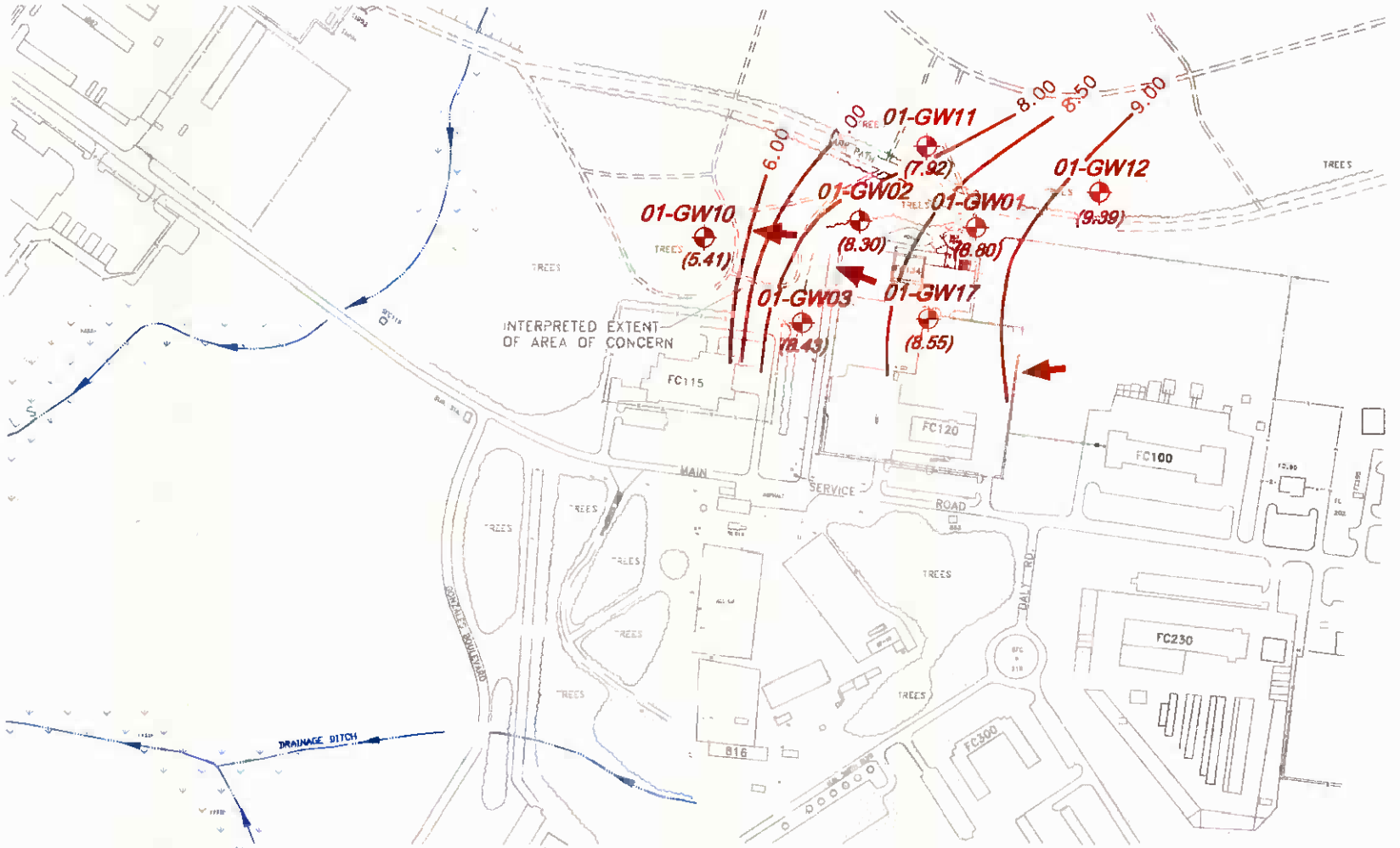
– DIRECTION OF SURFACE WATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992 AND W.K. DICKSON, JUNE 1994

FIGURE 2
SAMPLING LOCATION MAP
OPERABLE UNIT NO. 7 – SITE 28
MONITORING AND O&M SUPPORT, CTO – 0367

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

367514WP



NOTES:
1.) GROUNDWATER ELEVATION CONTOURS EXPRESSED IN FEET ABOVE MEAN SEA LEVEL.
2.) STATIC READINGS COLLECTED JANUARY 21, 1998.

500 0 250 500
1 inch = 500 ft.

Baker
Baker Environmental, Inc.

LEGEND

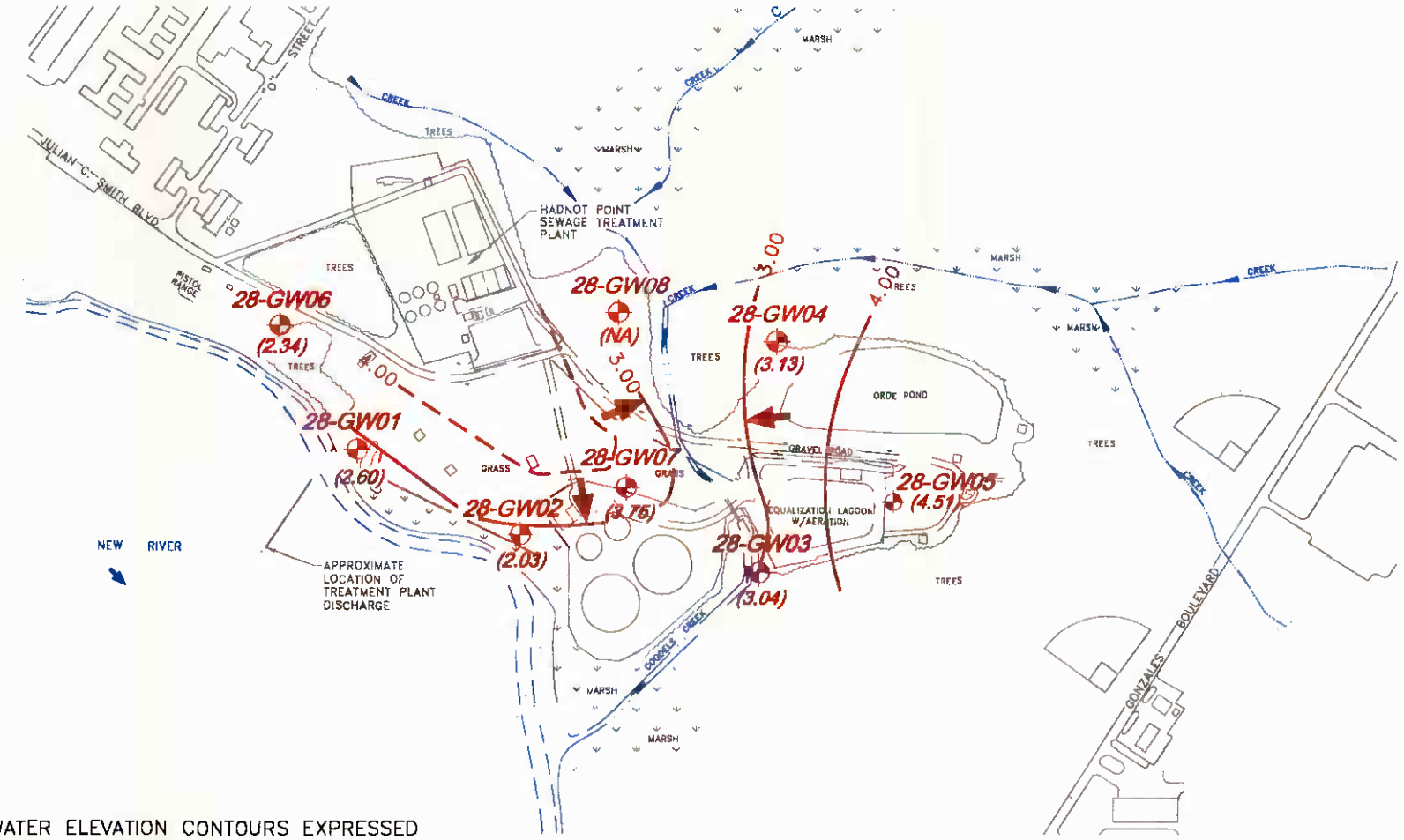
- 01-GW17 – SHALLOW MONITORING WELL
- (8.55) – GROUNDWATER ELEVATION
- 9.00 – GROUNDWATER ELEVATION CONTOUR
- – APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- – DIRECTION OF SURFACE WATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992 AND W.K. DICKSON & ASSOC., JUNE 1994

FIGURE 3
SHALLOW GROUNDWATER CONTOUR MAP
OPERABLE UNIT NO. 7 – SITE 1
MONITORING AND O&M SUPPORT, CTO – 0367

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

367517WP



NOTES:
1.) GROUNDWATER ELEVATION CONTOURS EXPRESSED IN FEET ABOVE MEAN SEA LEVEL.
2.) STATIC READINGS COLLECTED JANUARY 20, 1998.
3.) MONITORING WELL 28-GW08 WAS BURIED AT THE TIME OF WATER LEVEL COLLECTION.

500 0 250 500
1 inch = 500 ft.

Baker
Baker Environmental, Inc.

LEGEND

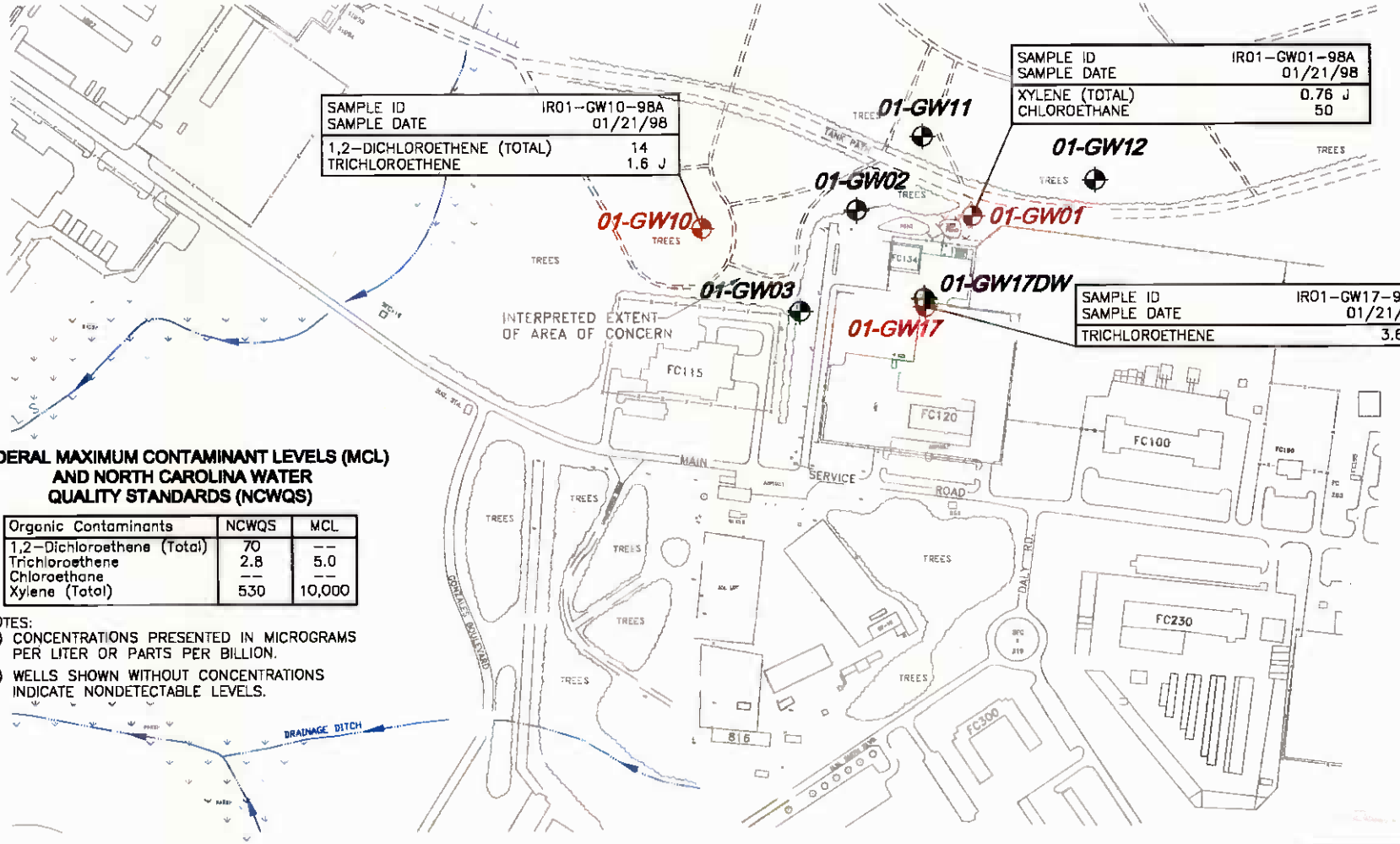
28-GW01 SHALLOW MONITORING WELL
(2.60) GROUNDWATER ELEVATION
3.00 GROUNDWATER ELEVATION CONTOUR
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
DIRECTION OF SURFACE WATER FLOW

SOURCE: LANTDIV. FEBRUARY 1992 AND W.K. DICKSON. JUNE 1994

FIGURE 4
SHALLOW GROUNDWATER CONTOUR MAP
OPERABLE UNIT NO. 7 – SITE 28
MONITORING AND O&M SUPPORT, CTO – 0367

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

367518WP



FEDERAL MAXIMUM CONTAMINANT LEVELS (MCL) AND NORTH CAROLINA WATER QUALITY STANDARDS (NCWQS)

Organic Contaminants	NCWQS	MCL
1,2-Dichloroethene (Total)	70	--
Trichloroethene	2.8	5.0
Chloroethane	--	--
Xylene (Total)	530	10,000

NOTES:
1.) CONCENTRATIONS PRESENTED IN MICROGRAMS PER LITER OR PARTS PER BILLION.
2.) WELLS SHOWN WITHOUT CONCENTRATIONS INDICATE NONDETECTABLE LEVELS.

500 0 250 500
1 inch = 500 ft.

Baker
Baker Environmental, Inc.

LEGEND

01-GW17 – SHALLOW MONITORING WELL

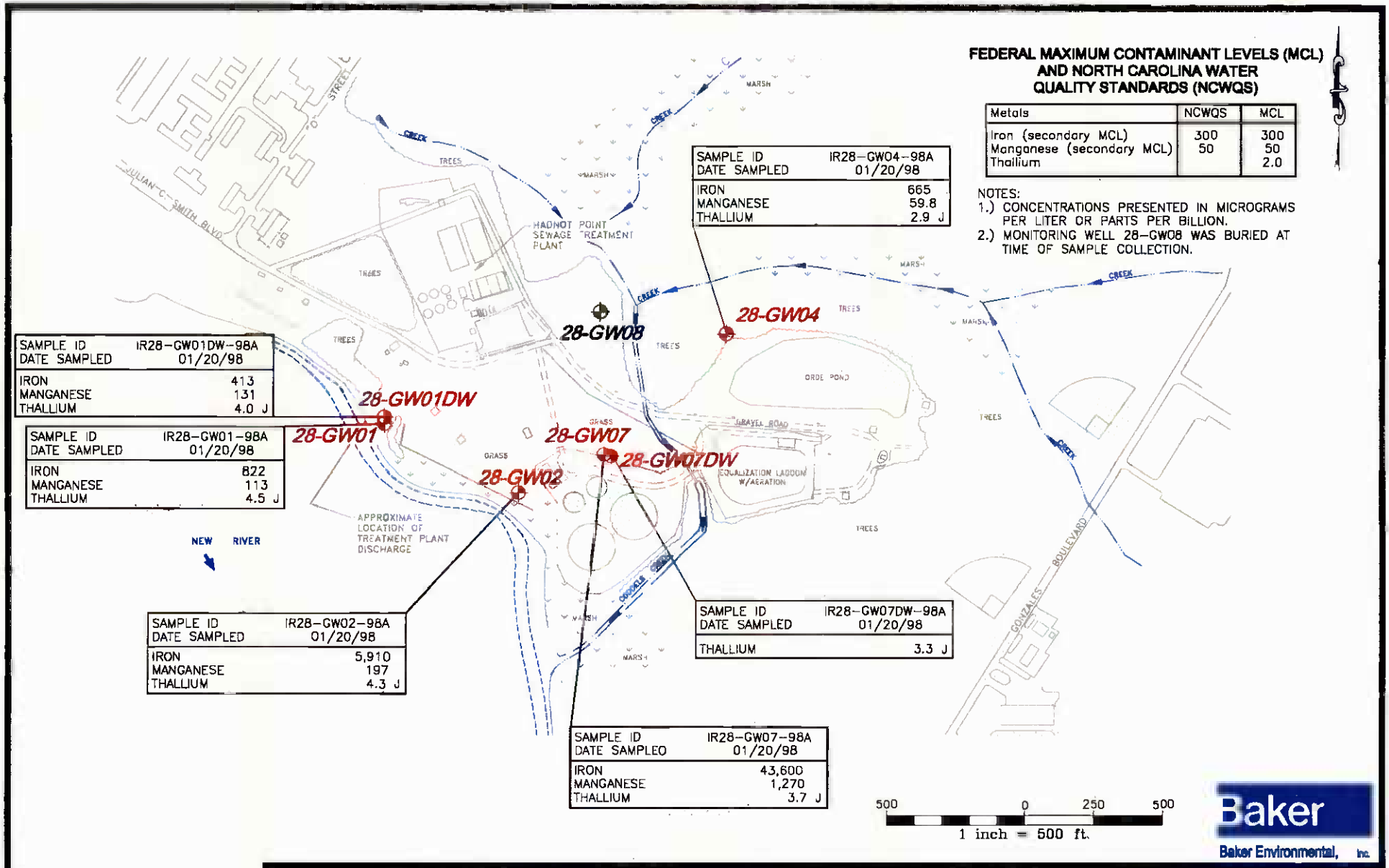
01-GW17DW – DEEP MONITORING WELL

DIRECTION OF SURFACE WATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992 AND W.K. DICKSON & ASSOC., JUNE 1994

FIGURE 5
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
OPERABLE UNIT NO. 7 – SITE 1
MONITORING AND O&M SUPPORT, CTO – 0367
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

367515WP



LEGEND

28-GW01 – SHALLOW MONITORING WELL

28-GW01DW – DEEP MONITORING WELL

– DIRECTION OF SURFACE WATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992 AND W.K. DICKSON, JUNE 1994

FIGURE 6
METALS IN GROUNDWATER ABOVE SCREENING STANDARDS
OPERABLE UNIT NO. 7 – SITE 28
MONITORING AND O&M SUPPORT, CTO – 0367

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

367516WP

ATTACHMENTS

ATTACHMENT A
CHAIN-OF-CUSTODY DOCUMENTATION

Chain of Custody Record

CHAIN OF CUSTODY NUMBER

* 0 0 0 7 5 8 - 0 0 1 *

COC # 36798A-09

QUA-4149-1

Client	Project Manager	Date	Page 1 of 1
Baker Environmental, Inc.	Baker Environmental, Inc.	01/08/1998	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Location**	
Airport Office Park Bldg 3	(412) 269-6000 / (000)	QUANTERRA - KNOXVILL	
City / **State** / **Zip Code**	**Site Contact**		
Coraopolis / PA / 15108	Baker Environmental, Inc.		
Project Number/Name	**Carrier/Waybill Number**		
Camp LeJeune	FedEx 802769751040		
Contract/Purchase Order/Quote Number			
CONTRACT / PURCHASE ORDER # : 1998		QUOTE: 21108	

Sample I.D. Number and Description	Date	Time	Sample Type	Containers: Volume	Containers: Type	Containers: No.	Preservative	Condition on Receipt/Comments	Analysis: MS826OLL
IR01-GW01-98A	1-21	1450	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-GW02-98A		1735	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-GW03-98A		1615	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-GW10-98A		1350	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-GW11-98A		1650	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-GW12-98A		1540	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-GW17-98A		1315	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-GW17DW-98A	↓	1450	WATER	40mL	VIAL	3	1:1 HCL		X
IR01-TB01-98A	1-22	1330	"	"	"	"	"		X

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☒ Normal ☐ Rush ☐ Other _____

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific Requirements (Specify)

		Date	Time		Date	Time
1. Relinquished By	[signature]	1-22-98	1700	1. Received By: FedEx	1-22-98	1700
2. Relinquished By				2. Received By		
3. Relinquished By				3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

Quanterra

CHAIN OF CUSTODY NUMBER

* 0 0 0 7 5 9 - 0 0 1 *

COC # 36798A-08

QUA-4149-1

Client	Project Manager	Date
Baker Environmental, Inc.	Baker Environmental, Inc.	01/08/1998
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Location**
Airport Office Park Bldg 3	(412) 269-6000 / (000)	QUANTERRA - KNOXVILL
City / **State** / **Zip Code**	**Site Contact**	
Coraopolis / PA / 15108	Baker Environmental, Inc.	
Project Number/Name	**Carrier/Waybill Number**	
Camp LeJeune	FedEx 802769750993	

Page 1 of 1

Contract/Purchase Order/Quote Number

CONTRACT / PURCHASE ORDER # : 1998

QUOTE: 21108

Sample I.D. Number and Description	Date	Time	Sample Type	Containers: Volume	Containers: Type	Containers: No.	Preservative	Condition on Receipt/Comments	Analysis: MCL PP3 (VOC)	Analysis: MCL PP3 (TCL)	Analysis: MCL PP3 (SVOC)	Analysis: MCL PP3 (TAL)
IR28-GW01-98A	1-20	1100	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-GW01DW-98A	1-20	1210	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-GW02-98A	1-21	1045	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-GW04-98A	1-20	1800	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-GW07-98A	1-20	1445	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-GW07DW-98A	1-20	1610	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
~~IR28-GW08-98A~~			~~WATER~~	~~1000mL~~	~~PLASTIC~~	~~1~~	~~Conc HNO3~~		X	X		
IR28-SW01-98A	1-21	1130	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-SW02-98A		1115	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-SW03-98A		1100	WATER	1000mL	PLASTIC	1	Conc HNO3		X	X		
IR28-SD01-98A		1135	SOLID	120mL	CLEAR GL	1	None				X	X
IR28-SD02-98A		1120	SOLID	120mL	CLEAR GL	1	None				X	X
IR28-SD03-98A		1105	SOLID	120mL	CLEAR GL	1	None				X	X

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☒ Normal ☐ Rush ☐ Other _____

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	1-21-98	1800	1. Received By: Fed Ex	1-21-98	1800
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: W[illegible] - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

ATTACHMENT B
MONITORING PROGRAM ANALYTICAL RESULTS

GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	IR01-GW01-98A	IR01-GW02-98A	IR01-GW03-98A	IR01-GW10-98A	IR01-GW11-98A	IR01-GW12-98A	IR01-GW17-98A
DATE SAMPLED	01-21-1998	01-21-1998	01-21-1998	01-21-1998	01-21-1998	01-21-1998	01-21-1998
VOLATILES (ug/l)							
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Toluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylenes (total)	0.76 J	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	5 U	5 U	5 U	14	5 U	5 U	5 U
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acetone	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	50	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	20 U	20 U	20 U	20 U	20 U	20 U	20 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5 U	5 U	5 U	1.6 J	5 U	5 U	3.6 J
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U

GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 1
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	IR01-GW17DW-98A	IR01-TB01-98A
DATE SAMPLED	01-21-1998	01-22-1998
VOLATILES (ug/l)		
Ethylbenzene	5 U	5 U
Styrene	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U
1,2-Dichloroethane	5 U	5 U
4-Methyl-2-pentanone	20 U	20 U
Toluene	5 U	5 U
Chlorobenzene	5 U	5 U
Dibromochloromethane	5 U	5 U
Tetrachloroethene	5 U	5 U
Xylenes (total)	5 U	5 U
1,2-Dichloroethene (total)	5 U	5 U
Carbon tetrachloride	5 U	5 U
2-Hexanone	20 U	20 U
Acetone	20 U	20 U
Chloroform	5 U	5 U
Benzene	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U
Bromomethane	10 U	10 U
Chloromethane	10 U	10 U
Chloroethane	10 U	10 U
Vinyl chloride	10 U	10 U
Methylene chloride	5 U	5 U
Carbon disulfide	5 U	5 U
Bromoform	5 U	5 U
Bromodichloromethane	5 U	5 U
1,1-Dichloroethane	5 U	5 U
1,1-Dichloroethene	5 U	5 U
1,2-Dichloropropane	5 U	5 U
2-Butanone	20 U	20 U
1,1,2-Trichloroethane	5 U	5 U
Trichloroethene	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U

GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	IR28-GW01-98A	IR28-GW01DW-98A	IR28-GW02-98A	IR28-GW04-98A	IR28-GW07-98A	IR28-GW07DW-98A
DATE SAMPLED	01-20-1998	01-20-1998	01-21-1998	01-20-1998	01-20-1998	01-20-1998
TOTAL METALS (ug/l)						
Aluminum	200 U	200 U	200 U	200 U	54.4 J	28.3 J
Antimony	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10 U	10 U	10 U	10 U	10 U	10 U
Barium	155 J	20.2 J	809	98 J	166 J	22.2 J
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	154000	124000	64600	88200	256000	59200
Chromium	8.2 J	6.3 J	10 U	4.1 J	8 J	3.9 J
Cobalt	50 U	50 U	50 U	50 U	10.1 J	50 U
Copper	3.5 J	25 U	4.7 J	25 U	3.5 J	25 U
Iron	822	413	5910	665	43600	288
Lead	3 U	3 U	3 U	3 U	3 U	3 U
Magnesium	15200	26800	27800	6540	19800	957 J
Manganese	113	131	197	59.8	1270	15.1
Mercury	0.053 J	0.035 J	0.038 J	0.057 J	0.11 J	0.2 U
Nickel	40 U	40 U	40 U	40 U	40 U	40 U
Potassium	14400	25000	52600	1650 J	2950 J	1730 J
Selenium	5 U	5 U	5 U	5 U	5 U	5 U
Silver	10 U	10 U	10 U	10 U	10 U	10 U
Sodium	54800	1060000	89200	62900	50000	7480
Thallium	4.5 J	4 J	4.3 J	2.9 J	3.7 J	3.3 J
Vanadium	25.8 J	20.8 J	13.7 J	19.3 J	34.2 J	15.5 J
Zinc	7.7 J	2.7 J	23	7.2 J	9.2 J	19.2 J

SURFACE WATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	IR28-SW01-98A	IR28-SW02-98A	IR28-SW03-98A
DATE SAMPLED	01-21-1998	01-21-1998	01-21-1998
TOTAL METALS (ug/l)			
Aluminum	98.3 J	121 J	130 J
Antimony	34.5 J	60 U	60 U
Arsenic	10 U	10 U	10 U
Barium	14.4 J	11.5 J	12.9 J
Beryllium	0.45 J	0.46 J	0.35 J
Cadmium	5 U	5 U	5 U
Calcium	163000	145000	149000
Chromium	3.6 J	10 U	10 U
Cobalt	50 U	50 U	50 U
Copper	25 U	25 U	25 U
Iron	240	329	398
Lead	3 U	3 U	3 U
Magnesium	469000	415000	429000
Manganese	11.7 J	12 J	12.2 J
Mercury	0.054 J	0.067 J	0.098 J
Nickel	40 U	40 U	40 U
Potassium	164000	142000	149000
Selenium	5 U	5 U	5 U
Silver	10 U	10 U	10 U
Sodium	4560000	3990000	4110000
Thallium	4.2 J	5 J	10 U
Vanadium	50 U	50 U	50 U
Zinc	8 J	4.7 J	3.2 J

SEDIMENT ANALYTICAL RESULTS
OPERABLE UNIT NO. 7 - SITE 28
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	IR28-SD01-98A	IR28-SD02-98A	IR28-SD03-98A
DATE SAMPLED	01-21-1998	01-21-1998	01-21-1998
METALS (mg/kg)			
Aluminum	784	809	1060
Antimony	16.2 U	18 U	14.9 U
Arsenic	2.7 U	0.99 J	1 J
Barium	2.4 J	2.4 J	2.4 J
Beryllium	1.3 U	1.5 U	1.2 U
Cadmium	1.3 U	1.5 U	1.2 U
Calcium	213 J	292 J	300 J
Chromium	0.95 J	1.7 J	3.1
Cobalt	13.5 U	15 U	12.4 U
Copper	1.4 J	7.1 J	9.4
Iron	512	722	1050
Lead	10	10.7	15.9
Magnesium	338 J	353 J	354 J
Manganese	4.4	4.7	6.7
Mercury	0.13 U	0.031 J	0.032 J
Nickel	10.8 U	12 U	9.9 U
Potassium	1350 U	1500 U	1240 U
Selenium	1.3 U	1.5 U	1.2 U
Silver	2.7 U	3 U	2.5 U
Sodium	1830	1740	1360
Thallium	2.7 U	3 U	2.5 U
Vanadium	3.5 J	4.6 J	3.8 J
Zinc	7.2	6.1	13.7
WET CHEMISTRY (%)			
Percent Moisture	25.9	33.4	19.5

ATTACHMENT C
ANALYTICAL LABORATORY DATA SHEETS

SITE 1

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 001

Sample WT/Vol: 5 / mL
Work Order: CF2KN101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW01-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	**Chloroethane**	**50**	
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 001

Sample WT/Vol: 5 / mL
Work Order: CF2KN101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW01-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	**Xylenes (total)**	**0.76**	**J**

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 002

Sample WT/Vol: 5 / mL
Work Order: CF2KR101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW02-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 002

Sample WT/Vol: 5 / mL
Work Order: CF2KR101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW02-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylenes (total)	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 003

Sample WT/Vol: 5 / mL
Work Order: CF2KV101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW03-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 003

Sample WT/Vol: 5 / mL
Work Order: CF2KV101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW03-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L		Q
108-88-3	Toluene		5.0	U
108-90-7	Chlorobenzene		5.0	U
100-41-4	Ethylbenzene		5.0	U
100-42-5	Styrene		5.0	U
1330-20-7	Xylenes (total)		5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 004

Sample WT/Vol: 5 / mL
Work Order: CF2KX101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW10-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	**1,2-Dichloroethene (total)**	**14**	
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	**Trichloroethene**	**1.6**	**J**
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 004

Sample WT/Vol: 5 / mL
Work Order: CF2KX101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW10-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylenes (total)	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 005

Sample WT/Vol: 5 / mL
Work Order: CF2L0101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW11-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 005

Sample WT/Vol: 5 / mL
Work Order: CF2L0101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW11-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylenes (total)	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 006

Sample WT/Vol: 5 / mL
Work Order: CF2L1101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW12-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 006

Sample WT/Vol: 5 / mL
Work Order: CF2L1101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW12-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylenes (total)	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 007

Sample WT/Vol: 5 / mL
Work Order: CF2L2101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW17-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	**Trichloroethene**	**3.6**	**J**
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 007

Sample WT/Vol: 5 / mL
Work Order: CF2L2101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW17-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylenes (total)	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 008

Sample WT/Vol: 5 / mL
Work Order: CF2L3101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW17DW-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 008

Sample WT/Vol: 5 / mL
Work Order: CF2L3101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-GW17DW-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylenes (total)	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 009

Sample WT/Vol: 5 / mL
Work Order: CF2L4101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-TB01-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5.0	U
67-64-1	Acetone	20	U
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
540-59-0	1,2-Dichloroethene (total)	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
75-27-4	Bromodichloromethane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
79-01-6	Trichloroethene	5.0	U
124-48-1	Dibromochloromethane	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
71-43-2	Benzene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-25-2	Bromoform	5.0	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U

BAKER ENVIRONMENTAL, INC.

Lab Name:QUANTERRA

SDG Number:

Matrix: (soil/water) WATER
Method: SW846 8260A
Volatile Organics, GC/MS (8260A)

Lab Sample ID:H8A230135 009

Sample WT/Vol: 5 / mL
Work Order: CF2L4101
Dilution factor: 1
Moisture %:NA

Date Received: 01/23/98
Date Extracted:02/01/98
Date Analyzed: 02/01/98

QC Batch: 8032104

Client Sample Id: IR01-TB01-98A

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
108-88-3	Toluene	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
1330-20-7	Xylenes (total)	5.0	U

SITE 28

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW01-98A

TOTAL Metals

Lot-Sample #...: H8A220178-001 Matrix.....: WATER
Date Sampled...: 01/20/98 Date Received..: 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	0.053 B	0.20	ug/L	ICLP ILM03.0	01/27-01/28/98	CF28110Q
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	ND	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281101
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28110L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28110M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281102
		Dilution Factor: 1				
Barium	155 B	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281103
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28110N
		Dilution Factor: 1				
Beryllium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281104
		Dilution Factor: 1				
Thallium	4.5 B	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28110P
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281105
		Dilution Factor: 1				
Calcium	154000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281106
		Dilution Factor: 1				
Chromium	8.2 B	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281107
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281108
		Dilution Factor: 1				
Copper	3.5 B	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW01-98A

TOTAL Metals

Lot-Sample #...: H8A220178-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	822	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110A
		Dilution Factor: 1				
Magnesium	15200	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110C
		Dilution Factor: 1				
Manganese	113	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110E
		Dilution Factor: 1				
Potassium	14400	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110G
		Dilution Factor: 1				
Sodium	54800	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF281
		Dilution Factor: 1				
Vanadium	25.8 B	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110J
		Dilution Factor: 1				
Zinc	7.7 B	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28110K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW01DW-98A

TOTAL Metals

Lot-Sample #...: H8A220178-002 **Matrix.....:** WATER
Date Sampled...: 01/20/98 **Date Received..:** 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	**0.035 B**	**0.20**	**ug/L**	**ICLP ILM03.0**	**01/27-01/28/98**	**CF28210Q**
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	ND	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF282101
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28210L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28210M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF282102
		Dilution Factor: 1				
Barium	**20.2 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF282103**
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28210N
		Dilution Factor: 1				
Beryllium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF282104
		Dilution Factor: 1				
Thallium	**4.0 B**	**10.0**	**ug/L**	**ICLP ILM03.0**	**01/28-01/30/98**	**CF28210P**
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF282105
		Dilution Factor: 1				
Calcium	**124000**	**5000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF282106**
		Dilution Factor: 1				
Chromium	**6.3 B**	**10.0**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF282107**
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF282108
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF282109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW01DW-98A

TOTAL Metals

Lot-Sample #...: H8A220178-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	413	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210A
		Dilution Factor: 1				
Magnesium	26800	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210C
		Dilution Factor: 1				
Manganese	131	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210E
		Dilution Factor: 1				
Potassium	25000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210G
		Dilution Factor: 1				
Sodium	1060000	10000	ug/L	ICLP ILM03.0	01/28-02/06/98	CF282.
		Dilution Factor: 2				
Vanadium	20.8 B	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210J
		Dilution Factor: 1				
Zinc	2.7 B	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28210K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW02-98A

TOTAL Metals

Lot-Sample #...: H8A220178-003 Matrix.....: WATER
Date Sampled...: 01/21/98 Date Received..: 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	0.038 B	0.20	ug/L	ICLP ILM03.0	01/27-01/28/98	CF28310Q
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	ND	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283101
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28310L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28310M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283102
		Dilution Factor: 1				
Barium	809	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283103
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28310N
		Dilution Factor: 1				
Beryllium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283104
		Dilution Factor: 1				
Thallium	4.3 B	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28310P
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283105
		Dilution Factor: 1				
Calcium	64600	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283106
		Dilution Factor: 1				
Chromium	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283107
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283108
		Dilution Factor: 1				
Copper	4.7 B	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW02-98A

TOTAL Metals

Lot-Sample #...: H8A220178-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	5910	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310A
		Dilution Factor: 1				
Magnesium	27800	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310C
		Dilution Factor: 1				
Manganese	197	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310E
		Dilution Factor: 1				
Potassium	52600	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310G
		Dilution Factor: 1				
Sodium	89200	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF283
		Dilution Factor: 1				
Vanadium	13.7 B	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310J
		Dilution Factor: 1				
Zinc	23.0	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28310K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW04-98A

TOTAL Metals

Lot-Sample #...: H8A220178-004 **Matrix.....:** WATER
Date Sampled...: 01/20/98 **Date Received..:** 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	**0.057 B**	**0.20**	**ug/L**	**ICLP ILM03.0**	**01/27-01/28/98**	**CF28410Q**
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	ND	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF284101
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28410L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28410M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF284102
		Dilution Factor: 1				
Barium	**98.0 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF284103**
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28410N
		Dilution Factor: 1				
Beryllium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF284104
		Dilution Factor: 1				
Thallium	**2.9 B**	**10.0**	**ug/L**	**ICLP ILM03.0**	**01/28-01/30/98**	**CF28410P**
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF284105
		Dilution Factor: 1				
Calcium	**88200**	**5000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF284106**
		Dilution Factor: 1				
Chromium	**4.1 B**	**10.0**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF284107**
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF284108
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF284109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW04-98A

TOTAL Metals

Lot-Sample #...: H8A220178-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	665	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410A
		Dilution Factor: 1				
Magnesium	6540	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410C
		Dilution Factor: 1				
Manganese	59.8	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410E
		Dilution Factor: 1				
Potassium	1650 B	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410G
		Dilution Factor: 1				
Sodium	62900	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF284
		Dilution Factor: 1				
Vanadium	19.3 B	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410J
		Dilution Factor: 1				
Zinc	7.2 B	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28410K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW07-98A

TOTAL Metals

Lot-Sample #...: H8A220178-005 Matrix.....: WATER
Date Sampled...: 01/20/98 Date Received..: 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	0.11 B	0.20	ug/L	ICLP ILM03.0	01/27-01/28/98	CF28510Q
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	54.4 B	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285101
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28510L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28510M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285102
		Dilution Factor: 1				
Barium	166 B	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285103
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28510N
		Dilution Factor: 1				
Beryllium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285104
		Dilution Factor: 1				
Thallium	3.7 B	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28510P
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285105
		Dilution Factor: 1				
Calcium	256000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285106
		Dilution Factor: 1				
Chromium	8.0 B	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285107
		Dilution Factor: 1				
Cobalt	10.1 B	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285108
		Dilution Factor: 1				
Copper	3.5 B	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW07-98A

TOTAL Metals

Lot-Sample #...: H8A220178-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	43600	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510A
		Dilution Factor: 1				
Magnesium	19800	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510C
		Dilution Factor: 1				
Manganese	1270	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510E
		Dilution Factor: 1				
Potassium	2950 B	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510G
		Dilution Factor: 1				
Sodium	50000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF285
		Dilution Factor: 1				
Vanadium	34.2 B	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510J
		Dilution Factor: 1				
Zinc	9.2 B	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28510K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW07DW-98A

TOTAL Metals

Lot-Sample #...: H8A220178-006 **Matrix.....:** WATER
Date Sampled...: 01/20/98 **Date Received..:** 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	ND	0.20	ug/L	ICLP ILM03.0	01/27-01/28/98	CF28610Q
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	**28.3 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF286101**
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28610L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28610M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF286102
		Dilution Factor: 1				
Barium	**22.2 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF286103**
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28610N
		Dilution Factor: 1				
Beryllium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF286104
		Dilution Factor: 1				
Thallium	**3.3 B**	**10.0**	**ug/L**	**ICLP ILM03.0**	**01/28-01/30/98**	**CF28610P**
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF286105
		Dilution Factor: 1				
Calcium	**59200**	**5000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF286106**
		Dilution Factor: 1				
Chromium	**3.9 B**	**10.0**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF286107**
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF286108
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF286109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-GW07DW-98A

TOTAL Metals

Lot-Sample #...: H8A220178-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	288	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610A
		Dilution Factor: 1				
Magnesium	957 B	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610C
		Dilution Factor: 1				
Manganese	15.1	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610E
		Dilution Factor: 1				
Potassium	1730 B	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610G
		Dilution Factor: 1				
Sodium	7480	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF286.
		Dilution Factor: 1				
Vanadium	15.5 B	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610J
		Dilution Factor: 1				
Zinc	19.2 B	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28610K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SW01-98A

TOTAL Metals

Lot-Sample #...: H8A220178-007 Matrix.....: WATER
Date Sampled...: 01/21/98 Date Received..: 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	0.054 B	0.20	ug/L	ICLP ILM03.0	01/27-01/28/98	CF28710Q
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	98.3 B	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287101
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28710L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28710M
		Dilution Factor: 1				
Antimony	34.5 B	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287102
		Dilution Factor: 1				
Barium	14.4 B	200	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287103
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28710N
		Dilution Factor: 1				
Beryllium	0.45 B	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287104
		Dilution Factor: 1				
Thallium	4.2 B	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28710P
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287105
		Dilution Factor: 1				
Calcium	163000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287106
		Dilution Factor: 1				
Chromium	3.6 B	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287107
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287108
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF287109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SW01-98A

TOTAL Metals

Lot-Sample #...: H8A220178-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**240**	**100**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF28710A**
		Dilution Factor: 1				
Magnesium	**469000**	**5000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF28710C**
		Dilution Factor: 1				
Manganese	**11.7 B**	**15.0**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF28710D**
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28710E
		Dilution Factor: 1				
Potassium	**164000**	**5000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF28710F**
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28710G
		Dilution Factor: 1				
Sodium	**4560000**	**50000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/06/98**	**CF287.**
		Dilution Factor: 10				
Vanadium	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28710J
		Dilution Factor: 1				
Zinc	**8.0 B**	**20.0**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF28710K**
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SW02-98A

TOTAL Metals

Lot-Sample #...: H8A220178-008 **Matrix.....:** WATER
Date Sampled...: 01/21/98 **Date Received..:** 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	**0.067 B**	**0.20**	**ug/L**	**ICLP ILM03.0**	**01/27-01/28/98**	**CF28810Q**
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	**121 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF288101**
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28810L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28810M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF288102
		Dilution Factor: 1				
Barium	**11.5 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF288103**
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28810N
		Dilution Factor: 1				
Beryllium	**0.46 B**	**5.0**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF288104**
		Dilution Factor: 1				
Thallium	**5.0 B**	**10.0**	**ug/L**	**ICLP ILM03.0**	**01/28-01/30/98**	**CF28810P**
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF288105
		Dilution Factor: 1				
Calcium	**145000**	**5000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF288106**
		Dilution Factor: 1				
Chromium	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF288107
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF288108
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF288109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SW02-98A

TOTAL Metals

Lot-Sample #...: H8A220178-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	329	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810A
		Dilution Factor: 1				
Magnesium	415000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810C
		Dilution Factor: 1				
Manganese	12.0 B	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810E
		Dilution Factor: 1				
Potassium	142000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810G
		Dilution Factor: 1				
Sodium	3990000	50000	ug/L	ICLP ILM03.0	01/28-02/06/98	CF288[illegible]
		Dilution Factor: 10				
Vanadium	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810J
		Dilution Factor: 1				
Zinc	4.7 B	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28810K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SW03-98A

TOTAL Metals

Lot-Sample #...: H8A220178-009 Matrix.....: WATER
Date Sampled...: 01/21/98 Date Received..: 01/22/98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8027129						
Mercury	**0.098 B**	**0.20**	**ug/L**	**ICLP ILM03.0**	**01/27-01/28/98**	**CF28910Q**
		Dilution Factor: 1				
Prep Batch #...: 8028111						
Aluminum	**130 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF289101**
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28910L
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28910M
		Dilution Factor: 1				
Antimony	ND	60.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF289102
		Dilution Factor: 1				
Barium	**12.9 B**	**200**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF289103**
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28910N
		Dilution Factor: 1				
Beryllium	**0.35 B**	**5.0**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF289104**
		Dilution Factor: 1				
Thallium	ND	10.0	ug/L	ICLP ILM03.0	01/28-01/30/98	CF28910P
		Dilution Factor: 1				
Cadmium	ND	5.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF289105
		Dilution Factor: 1				
Calcium	**149000**	**5000**	**ug/L**	**ICLP ILM03.0**	**01/28-02/05/98**	**CF289106**
		Dilution Factor: 1				
Chromium	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF289107
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF289108
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF289109
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SW03-98A

TOTAL Metals

Lot-Sample #...: H8A220178-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	398	100	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910A
		Dilution Factor: 1				
Magnesium	429000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910C
		Dilution Factor: 1				
Manganese	12.2 B	15.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910D
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910E
		Dilution Factor: 1				
Potassium	149000	5000	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910F
		Dilution Factor: 1				
Silver	ND	10.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910G
		Dilution Factor: 1				
Sodium	4110000	50000	ug/L	ICLP ILM03.0	01/28-02/06/98	CF289[illegible]
		Dilution Factor: 10				
Vanadium	ND	50.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910J
		Dilution Factor: 1				
Zinc	3.2 B	20.0	ug/L	ICLP ILM03.0	01/28-02/05/98	CF28910K
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD01-98A

TOTAL Metals

Lot-Sample #...: H8A220178-010 **Matrix.....:** SOLID
Date Sampled...: 01/21/98 **Date Received..:** 01/22/98
% Moisture.....: 26

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8030108						
Mercury	ND	0.13 Dilution Factor: 1	mg/kg	ICLP ILM03.0	01/30/98	CF28A10Q
Prep Batch #...: 8036123						
Aluminum	**784**	**54.0** Dilution Factor: 1	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28A105**
Arsenic	ND	2.7 Dilution Factor: 1	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28A101
Lead	**10.0**	**0.81** Dilution Factor: 1	**mg/kg**	**ICLP ILM03.0**	**02/05-02/06/98**	**CF28A102**
Antimony	ND	16.2 Dilution Factor: 1	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A106
Barium	**2.4 B**	**54.0** Dilution Factor: 1	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28A107**
Selenium	ND	1.3 Dilution Factor: 1	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28A103
Beryllium	ND	1.3 Dilution Factor: 1	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A108
Thallium	ND	2.7 Dilution Factor: 1	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28A104
Cadmium	ND	1.3 Dilution Factor: 1	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A109
Calcium	**213 B**	**1350** Dilution Factor: 1	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28A10A**
Chromium	**0.95 B**	**2.7** Dilution Factor: 1	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28A10C**
Cobalt	ND	13.5 Dilution Factor: 1	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10D
Copper	**1.4 B**	**6.7** Dilution Factor: 1	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28A10E**

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD01-98A

TOTAL Metals

Lot-Sample #...: H8A220178-010 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	512	27.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10F
		Dilution Factor: 1				
Magnesium	338 B	1350	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10G
		Dilution Factor: 1				
Manganese	4.4	4.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10H
		Dilution Factor: 1				
Nickel	ND	10.8	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10J
		Dilution Factor: 1				
Potassium	ND	1350	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10K
		Dilution Factor: 1				
Silver	ND	2.7	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10L
		Dilution Factor: 1				
Sodium	1830	1350	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A...
		Dilution Factor: 1				
Vanadium	3.5 B	13.5	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10N
		Dilution Factor: 1				
Zinc	7.2	5.4	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28A10P
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD01-98A

General Chemistry

Lot-Sample #...: H8A220178-010 Work Order #...: CF28A Matrix.....: SOLID
Date Sampled...: 01/21/98 Date Received..: 01/22/98
% Moisture.....: 26

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	25.9	0.10	%	MCAWW 160.3 MOD	02/03-02/04/98	8036199

Dilution Factor: 1

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD02-98A

TOTAL Metals

Lot-Sample #...: H8A220178-011 Matrix.....: SOLID
Date Sampled...: 01/21/98 Date Received..: 01/22/98
% Moisture.....: 33

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8030108						
Mercury	0.031 B	0.15	mg/kg	ICLP ILM03.0	01/30/98	CF28D10Q
		Dilution Factor: 1				
Prep Batch #...: 8036123						
Aluminum	809	60.1	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D105
		Dilution Factor: 1				
Arsenic	0.99 B	3.0	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28D101
		Dilution Factor: 1				
Lead	10.7	0.90	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28D102
		Dilution Factor: 1				
Antimony	ND	18.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D
		Dilution Factor: 1				
Barium	2.4 B	60.1	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D107
		Dilution Factor: 1				
Selenium	ND	1.5	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28D103
		Dilution Factor: 1				
Beryllium	ND	1.5	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D108
		Dilution Factor: 1				
Thallium	ND	3.0	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28D104
		Dilution Factor: 1				
Cadmium	ND	1.5	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D109
		Dilution Factor: 1				
Calcium	292 B	1500	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D10A
		Dilution Factor: 1				
Chromium	1.7 B	3.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D10C
		Dilution Factor: 1				
Cobalt	ND	15.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D10D
		Dilution Factor: 1				
Copper	7.1 B	7.5	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D10E
		Dilution Factor: 1				

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BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD02-98A

TOTAL Metals

Lot-Sample #...: H8A220178-011 **Matrix.....: SOLID**

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**722**	**30.0**	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28D10F**
		Dilution Factor: 1				
Magnesium	**353 B**	**1500**	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28D10G**
		Dilution Factor: 1				
Manganese	**4.7**	**4.5**	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28D10H**
		Dilution Factor: 1				
Nickel	ND	12.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D10J
		Dilution Factor: 1				
Potassium	ND	1500	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D10K
		Dilution Factor: 1				
Silver	ND	3.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28D10L
		Dilution Factor: 1				
Sodium	**1740**	**1500**	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28D10M**
		Dilution Factor: 1				
Vanadium	**4.6 B**	**15.0**	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28D10N**
		Dilution Factor: 1				
Zinc	**6.1**	**6.0**	**mg/kg**	**ICLP ILM03.0**	**02/05-02/09/98**	**CF28D10P**
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD02-98A

General Chemistry

Lot-Sample #...: H8A220178-011 Work Order #...: CF28D Matrix.....: SOLID
Date Sampled...: 01/21/98 Date Received..: 01/22/98
% Moisture.....: 33

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	33.4	0.10	%	MCAWW 160.3 MOD	02/03-02/04/98	8036199

Dilution Factor: 1

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD03-98A

TOTAL Metals

Lot-Sample #...: H8A220178-012 Matrix.....: SOLID
Date Sampled...: 01/21/98 Date Received..: 01/22/98
% Moisture.....: 20

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8030108						
Mercury	0.032 B	0.12	mg/kg	ICLP ILM03.0	01/30/98	CF28E10Q
		Dilution Factor: 1				
Prep Batch #...: 8036123						
Aluminum	1060	49.7	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E105
		Dilution Factor: 1				
Arsenic	1.0 B	2.5	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28E101
		Dilution Factor: 1				
Lead	15.9	0.75	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28E102
		Dilution Factor: 1				
Antimony	ND	14.9	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E106
		Dilution Factor: 1				
Barium	2.4 B	49.7	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E107
		Dilution Factor: 1				
Selenium	ND	1.2	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28E103
		Dilution Factor: 1				
Beryllium	ND	1.2	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E108
		Dilution Factor: 1				
Thallium	ND	2.5	mg/kg	ICLP ILM03.0	02/05-02/06/98	CF28E104
		Dilution Factor: 1				
Cadmium	ND	1.2	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E109
		Dilution Factor: 1				
Calcium	300 B	1240	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10A
		Dilution Factor: 1				
Chromium	3.1	2.5	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10C
		Dilution Factor: 1				
Cobalt	ND	12.4	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10D
		Dilution Factor: 1				
Copper	9.4	6.2	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10E
		Dilution Factor: 1				

(Continued on next page)

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD03-98A

TOTAL Metals

Lot-Sample #...: H8A220178-012 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	1050	24.8	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10F
		Dilution Factor: 1				
Magnesium	354 B	1240	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10G
		Dilution Factor: 1				
Manganese	6.7	3.7	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10H
		Dilution Factor: 1				
Nickel	ND	9.9	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10J
		Dilution Factor: 1				
Potassium	ND	1240	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10K
		Dilution Factor: 1				
Silver	ND	2.5	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10L
		Dilution Factor: 1				
Sodium	1360	1240	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E...
		Dilution Factor: 1				
Vanadium	3.8 B	12.4	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10N
		Dilution Factor: 1				
Zinc	13.7	5.0	mg/kg	ICLP ILM03.0	02/05-02/09/98	CF28E10P
		Dilution Factor: 1				

NOTE(S):

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

BAKER ENVIRONMENTAL, INC.

Client Sample ID: IR28-SD03-98A

General Chemistry

Lot-Sample #...: H8A220178-012 Work Order #...: CF28E Matrix.....: SOLID
Date Sampled...: 01/21/98 Date Received..: 01/22/98
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	19.5	0.10	%	MCAWW 160.3 MOD	02/03-02/04/98	8036199

Dilution Factor: 1

ATTACHMENT D
STATISTICAL DATA ANALYSIS

Trichloroethene in Site 1 Groundwater Samples*

Descriptive Data Analyses:

01-GW10	
Mean	1.82
Standard Error	0.745754651
Median	1.6
Mode	0.25
Standard Deviation	1.667558095
Sample Variance	2.78075
Skewness	0.382141199
Range	3.75
Minimum	0.25
Maximum	4
Sum	9.1
Count	5
Confidence Level(95.0%)	2.07055114

01-GW17	
Mean	1.47
Standard Error	0.75309362
Median	0.25
Mode	0.25
Standard Deviation	1.683968527
Sample Variance	2.83575
Skewness	0.680376761
Range	3.35
Minimum	0.25
Maximum	3.6
Sum	7.35
Count	5
Confidence Level(95.0%)	2.090927425

* Assume Non-detections equal one-half the Method Detection Limit (EPA Method 8260A for TCE = 0.5 ug/L)

S.O. No. CTO-367

Subject: 95% Confidence Interval

TCE in Ø1-GW1Ø

Sheet No. _____ of _____

Drawing No. _____

Computed by TFT Checked By PAM Date 4-28-98

Baker

* Assume 1/2 detection limit for non-detections (0.25 µg/L).

Results (in date sequence): 4.0, ND, 3.0, ND, 1.6

Sample Size (n) = 5

Confidence Interval: $\bar{x} \pm t^* \cdot s/\sqrt{n}$

$\bar{x}$ = mean
s = standard deviation
t^* = t-statistic from Look-up table
n = sample size

From Descriptive Data Analyses:
(Computer Generated)

$$1.82 \pm 2.776 \left(1.6675/\sqrt{5}\right)$$

$$1.82 \pm 2.071$$

95% Confidence Interval: (Ø, 3.89)

$$s^2 = 1/n-1 \left[\Sigma x_i^2 - 1/n (\Sigma x_i)^2\right]$$

S.O. No. CTO-367

Subject: 95% Confidence Interval
TCE in Ø1-GW17

Sheet No. ____ of ____

Drawing No. ____

Computed by TFT Checked By PAM Date 4-28-98

Baker

* Assume ½ detection limit for non-detections (0.25 µg/L)

Results (in date sequence): ND, ND, 3.0, ND, 3.6

Sample Size (n) = 5

Confidence Interval: $\bar{x} \pm t^* \cdot s/\sqrt{n}$

$\bar{x}$ = mean
s = standard deviation
t^* = t-statistic from Look-up Table
n = sample size

From Descriptive Data Analyses:
(Computer Generated)

$$1.47 \pm 2.776 \left(1.6839/\sqrt{5}\right)$$

$$1.47 \pm 2.091$$

95% Confidence Interval: (Ø, 3.56)

$$s^2 = 1/n-1 \left[\Sigma x_i^2 - 1/n \left(\Sigma x_i\right)^2\right]$$